

TECHNOLOGY DEPT

MOTOR AGE

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BRADLEY

Christmas

DECEMBER 1949



There's only one *Aero-type* Spark Plug for Cars, Trucks and Tractors

NR v.69! Dec. 1949-May 1950

- Built to Aircraft Standards
- With an Aircraft Insulator
- Performance Rated like Aircraft Plugs

Hastings Aero-type Spark Plugs actually give aircraft performance in cars, trucks or tractors.

They are built to the standards which give fighter planes and superforts long and trouble-free plug life.

They have the same insulator—H.T. Aluminum Oxide—as the finest aircraft plugs.

And they are Performance Rated by the same tests given by airplane engine manufacturers.

In addition, each and every Hastings Spark Plug is X-Ray Tested for uniformity, for proper construction and heat flow. Each has the new wider gap setting which gives *full-range* ignition—correct firing at high and low speeds.

Here, at last, is a truly fine spark plug—one which will improve engine performance, give longer life and trouble-free service with every installation.

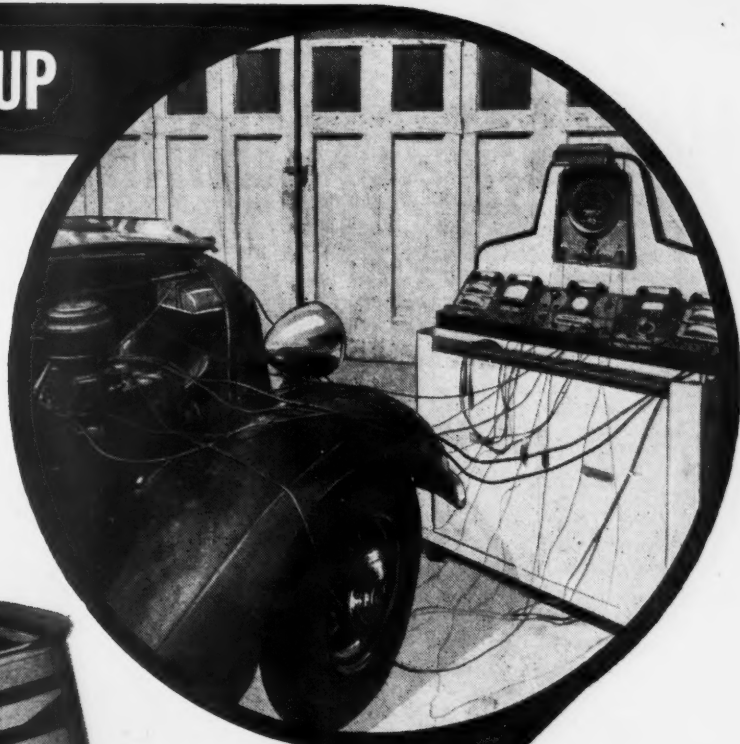
SPARK PLUG DIVISION, HASTINGS MANUFACTURING CO., HASTINGS, MICHIGAN

\$1.25 and worth it!

If Hastings Spark Plugs are not yet available in your territory, write direct for illustrated catalog. Distribution is being developed as rapidly as possible—your jobber will be able to supply you soon.



BEFORE YOU TUNE-UP



... USE THIS

First, add one quart of Permatex Toon-Oyl to crankcase oil. It will dissolve sludge and gum binders that interfere with the smooth operation of valves, piston rings, oil lines and oil screens.

Then you'll have a clean engine... ready for accurate mechanical adjustments!

PERMATEX COMPANY, INC., BROOKLYN 29, N. Y.

How to go gunning for ^{more} business...



... with **MARFAK**, the service
that builds **CUSTOMERS**, boosts **PROFITS!**

MARFAK makes *regular* customers of the in-and-outers. Once they've had a Marfak lube job, they come back for more.

Marfak is Texaco's superior lubricant that really sticks to its job, lubricating and protecting chassis bearings, for a thousand miles and more. It gives any car that "cushiony" feeling which motorists read about in the Marfak ads appearing in leading magazines, and see and hear about on the record-breaking Texaco Star Theatre television show.

Remember — satisfied customers come back, and thus provide you with more opportunities to sell them batteries, tires, and

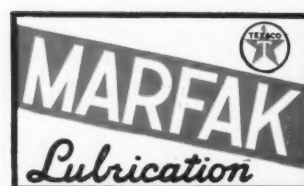
your other profitable items. Find out how you, too, can build up your lube business with Marfak—and boost your over-all profits!

Talk to your Texaco representative. Phone the nearest of the more than 2300 Texaco Wholesale Distributing Plants. Or—write to The Texas Company, 135 East 42nd Street, New York 17, N. Y.



You can make more money with

THE TEXAS COMPANY



MOTOR AGE

WITH WHICH IS COMBINED AUTOMOBILE TRADE JOURNAL

Reg. U. S. Pat. Off.

for AUTOMOTIVE SERVICEMEN

Vol. LXIX, No. 1

December, 1949

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YOU CAN BE A

Leader

with

UNITED MOTORS LINES

There's no question about it—you can be a leader—once you've "signed up" and are in business with one or more of the United Motors lines!

For the products in these lines are *leaders*—they are used on the country's leading makes of cars, trucks and buses. And the popularity of the products is maintained by consistent national advertising. But the advantage of handling United Motors lines goes beyond the desirability of the products. As a dealer, you

are kept supplied with *accurate, up-to-the-minute* service and parts data, on old-model as well as current-model vehicles. Promotion of the lines and of your business is provided for in a succession of campaigns featuring signs, displays and direct mail advertising.

The replacement and service market on United Motors lines is ready and waiting. Talk this over with your local United Motors distributor today, or write directly to us.

UNITED MOTORS SERVICE

Division of General Motors Corporation

General Motors Building, Detroit 2, Michigan



DELCO Batteries
AC Gauges, Speedometers and Rebuilt Fuel Pumps
DELCO Auto Radios
SAGINAW Jacks
MORaine Engine Bearings

DELCO Radio Parts
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HARRISON Heaters
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DELCO-REMY Starting, Lighting and Ignition
KLAXON Horns
HARRISON Radiators
ROCHESTER Carburetors
DELCO Hydraulic Brakes



1. STABILIZER INNER-RING
2. METERED LUBRICATION
3. BATTLESHIP OIL PORTS
4. SLEIGH RUNNER STEEL SEGMENTS

**that is the backbone of the MOOG
X-PLUS PISTON RING SET-UP!**

Insures FULL POWER performance, backed by a labor and material guarantee of 10,000 miles, or one year's driving, to help you ELIMINATE COSTLY COMEBACKS. Write today for name of nearest Moog distributor.

MOOG PISTON RING CO.

Division of: MOOG INDUSTRIES, INC.

6650 Easton Ave. St. Louis 14, Mo.



©
1949 M. I. L.

No other DEAL offers this
Dollar Making Combination

AUTO-LITE Silver



You'll find the new Auto-Lite "Silver Package" worth its weight in gold as it "sells up" your wire and cable sales for more profits and premium quality satisfaction. The Auto-Lite "Silver Line" is a complete line—Steelductor Spark Plug Wire, Flexstrand primary wire, Auto-Lite Silver Battery

Cable with the new power-line terminal that holds tight. Cut-to-length sets for all popular cars and the widest range of solderless terminals in Auto-Lite history. Cash in on this outstanding wire and cable line. It's geared to sell. Consult your Jobber's salesmen for complete details.

THE ELECTRIC AUTO-LITE COMPANY

Toronto, Ontario

Merchandising Division

Toledo 1, Ohio

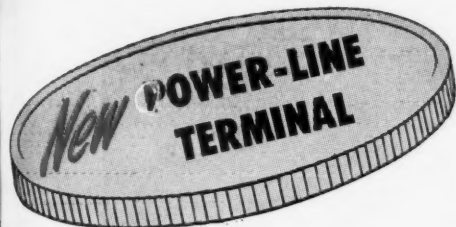
Line WIRE AND CABLE



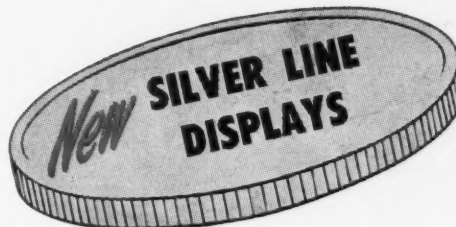
Brilliant in appearance, outstanding in design... helps build customer demand for this top quality line.



Improved construction. Additional strands of finer wire provide amazing flexibility, ease of handling and resistance to vibration.



The last word in modern design! Battery cable terminal engineered for a more perfect connection, without distortion to terminal or post.



New counter merchandiser for Steel-duct Ignition sets; Silver Battery Cable Display Board, and many other merchandising helps.



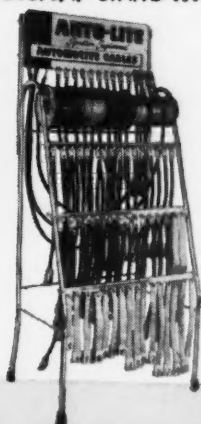
Auto-Lite Original Equipment places the stamp of approval on Auto-Lite Wire & Cable Products.



In magazines, newspapers, trade publications and on the top-rated Auto-Lite "Suspense!" Show broadcast on radio Thursday nights and on television Tuesday nights.



NEW SALES BOOSTING DISPLAY STAND...



Available to ALL Stocking Dealers

At right—New Auto-Lite Battery Cable Wall Rack, 16 hooks, comes without extra cost on purchase of only \$14.95 worth of Auto-Lite Battery Cable.

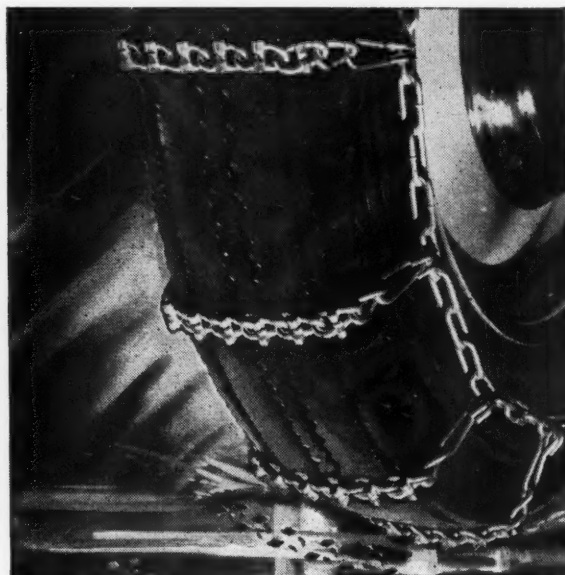
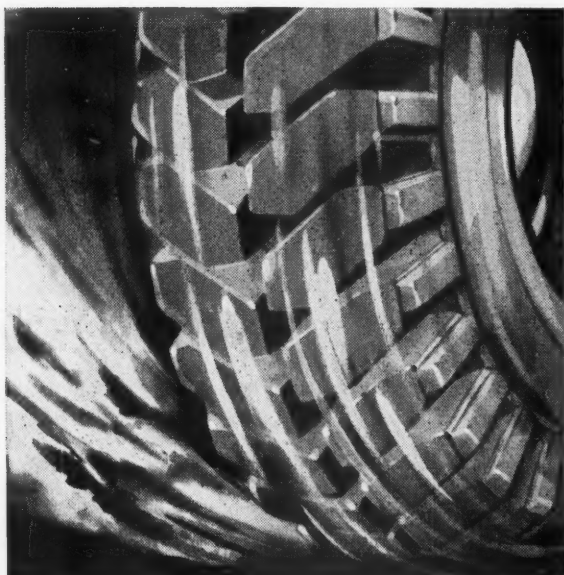
At left—Sales boosting wire and cable floor display is available from your jobber at special price with purchase of assortment of Auto-Lite Wire and Cable. Find out about free Auto-Lite Wire and Cable signs and other point of sale material.

NEW BATTERY CABLE WALL DISPLAY...



Wet Rubber Will Slip

There is no substitute for
CHAINS



TO STOP THIS . . . YOU NEED THIS

No matter how many corrugations or how deep the tread, rubber will slip on icy pavements and hard, packed snow. You always ride on the smooth surface of the tire—there are no lugs to dig in to give the tire a grip on hard snow or ice. Rough rubber treads may give starting traction in light, soft snow, but the real problem is *stopping traction!* Wet rubber will *not* give stopping traction—wet rubber will *not* give protection against skidding—wet rubber will *not* give traction for sudden stops! That's why chains were invented and there is still no substitute for chains.

Chains dig in for traction on *icy roads* and *hard, packed snow*. Campbell Lug Reinforced Tire Chains are especially designed for *maximum traction*—for protection against skids—for perfect *stopping* as well as *sure starting*. For winter weather driving, Campbell Chains on the smoothest tires are safer than the *deepest and most rugged-looking treads* without chains! For full details on jobber and distributor propositions, contact us.

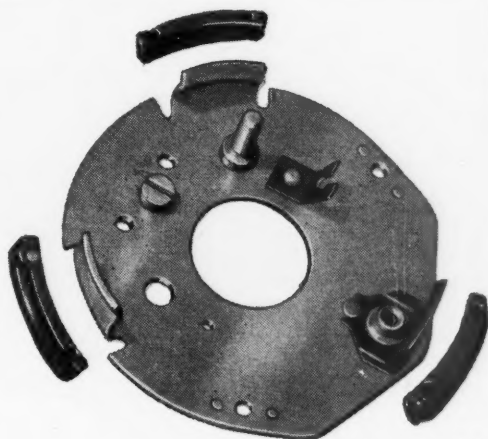
CAMPBELL CHAIN *Company*
York, Penna.



Want to be SURE?



1913500—8-Cyl. C.W. Package; 1913502—6-Cyl. C.W. Package—Two complete packages with all parts assembled provide quick repair of Delco-Remy 6- and 8-cylinder, single plate, clockwise rotation, ball track distributors. Each package includes contact points properly mounted and aligned and with spring tension set at the factory.



1914446—8-Cyl. C.W. Package; 1914448—6-Cyl. C.W. Package—Two packages are also available for Delco-Remy 6- and 8-cylinder, single plate, clockwise distributors, where new contacts and a new condenser are not required.

DELCO-REMY DISTRIBUTOR RENEWAL PACKAGES

- Easy to install • No drilling—No special tools • Restores the smooth vacuum action of the original distributor • Factory assembled to original equipment standards • Available in popular assortments • Easy to handle—Just right to sell.

USE DELCO-REMY DISTRIBUTOR RENEWAL PACKAGES

You can give better service with these Delco-Remy renewal breaker plates. Here's why—

They fit perfectly because they are made by Delco-Remy to Delco-Remy specifications—designed to replace original distributor parts.

You can do the job faster—without drilling or special tools—with perfect results every time.

Customers like the idea, too. They are pre-sold on original equipment parts.

Thus here in these Delco-Remy Distributor Renewal Packages you have the right combination of simple, easy installation and customer satisfaction. Get a supply today. Contact your UNITED MOTORS DISTRIBUTOR.

Delco-Remy
DIVISION, GENERAL MOTORS CORPORATION
ANDERSON, INDIANA



DELCO-REMY—A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

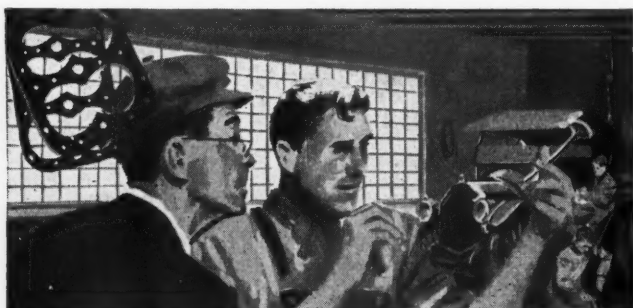
WHEREVER WHEELS TURN OR PROPELLERS SPIN

17 miles NON-STOP!

Reading time: 1 minute, 54 seconds.

Don "breezed" down the unpaved business street of a neighboring town and pulled up in a cloud of dust at the corner drugstore. With his Dad's new Runabout, he had covered 17 miles from his home in 2 hours without mishap.

This happened some forty-odd years ago . . . but that's when the future of motor cars really caught Don's imagination. "Some day," he boasted, "We'll be making that distance in half the time . . . maybe less." Soon afterward he decided on a course in automotive engineering.



This training led to a job in the shop of a local car dealer who had just opened for business.

Servicing cars for customers frequently gave Don the chance to talk with their owners. They came to him for advice . . . and took it. After a time Don decided to concentrate on selling. "I used to put in 12 to 15 hours a day," he recalls, "But it paid out." Naturally his income increased and his bank account grew.



One day in 1928, a magazine ad intrigued him. For Don was ambitious; he had a family and was looking ahead. The ad told about a new make of car shortly to be announced . . . It was De Soto. An overnight jump and he turned up at the factory in Detroit. "I came to talk about being your dealer back home," he said.



That very day he saw the first De Soto cars and asked a lot of questions about them engineering-wise. The De Soto folks asked him a lot of questions, too. In fact, they checked further into his experience and reputation. That's how Don became his own boss, and he's been serving De Soto and Plymouth customers ever since.

The efforts of alert, "Non-Stop" fellows like Don have done a great deal to stimulate activities along many



a "Main Street" in the past quarter century. Naturally, they have prospered along with the communities they're serving.

Similar opportunities today await aggressive and industrious men whose knowledge and experience qualify them for the responsibilities of the retail automobile business.

Write for our free booklet containing a number of these stories of accomplishments by enterprising men. Chrysler Corporation, 341 Massachusetts Ave., Highland Park 3, Michigan.



Chrysler Corporation

PLYMOUTH • DODGE • DE SOTO • CHRYSLER • DODGE "Job-Rated" TRUCKS
Fine Cars of Great Value

only **ONE**
wheel balancer
Checks OK on ALL TEN!

...that's why Shop Operators Prefer "BEAR" 2 to 1

THE MORE YOU COMPARE—THE Surer IT'S "BEAR"! Only "Bear", first in its field, can afford to invite such comparison. Because we know that when you have gotten all the facts for yourself—checked personally the ten essentials that are a MUST for

Correct Wheel Balancing and Bigger Profits, you will see with your own eyes the "Bear" and "Bear" alone, has ALL TEN. That's why, in Balancing, "Bear" is "The Buy". See your "Bear" Jobber Salesman today or write, "Bear" Mfg. Co., Dept. M-1 Rock Island, Ill.

"BEAR"

Trade Mark Reg. U. S. Pat. Off.

*Dy-Namic "33"
Balancer*



Balances wheels at ALL speeds.

Checks both Static and Dy-Namic Un-balance in ONE operation.

Gets the wheels off which means more and bigger service and part sales for you.

Easiest to operate.

Fastest in operation.

Really spins the wheel.

Tests and corrects wheels in normal driving position.

Dramatic "Spark" Indicator enables car owner to see for himself.

Electrically indicates the exact location and amount of Static and Dy-Namic Un-balance.

ALL THIS, PLUS The "Bear" Sign Nationally Advertised in The **POST**



R4002

Exclusive with ARO

FAMOUS "HI-LO" PRESSURE PUMP

Nothing like it for
PROFITABLE
Lube Service!

Look "under the hood" of smartly styled Aro DeLuxe Lubricators—there you'll find the famous "HI-LO" Pressure Pump that makes a whale of a difference in your service... *and your profits!*

Only ARO has "HI-LO"—and that means you can use LO pressure, up to 1800 lbs., for 90% of all fittings—or you can switch instantly to HI, up to 6000 lbs., for the tough ones. This saves time... prolongs life of hose and equipment... produces 25% to 40% more jobs from your lubricant... and saves air! Aro's great pump is *performance proved* in fifteen years of hard usage by thousands of garages and service stations throughout the world. See your Aro Jobber. The Aro Equipment Corporation, Bryan, Ohio.

ARO

LUBRICATING EQUIPMENT ALSO... AIR TOOLS...HYDRAULIC EQUIPMENT...AIRCRAFT PRODUCTS...GREASE FITTINGS



Model 5750 Chassis Lubricator

LAPPED FINISH

Low pressure grease cylinder and piston lapped to a .0002" mirror finish, similar to finish used in finest aircraft. No balls, springs or packing.

Guide FOG LAMPS for all makes of cars and trucks

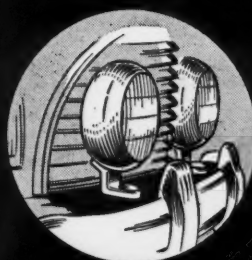


Guide Fog Lamps feature a compact design that permits easy installation on all makes of cars *including latest models*. They have a handsome, eye-catching, heavy-chrome finish . . . give improved visibility that makes them safety "musts" under adverse weather conditions. Guide Fog Lamps come packaged in pairs, complete with fused switch, wiring and interchangeable mounting, for rapid attachment to splash pan, bumper bracket or fender. You can build new sales, new profits, when you sell Guide Fog Lamps—the lamp with universal appeal *plus* universal application!



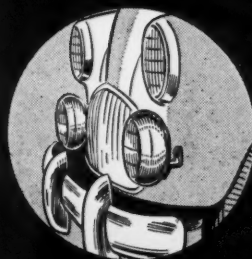
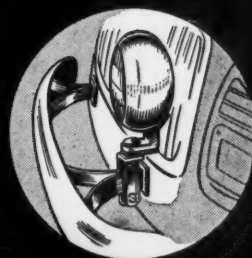
GUIDE LAMP—A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

EASY TO INSTALL



SPLASH PAN
Bracket bolted direct to pan.

BUMPER BRACKET
For those cars having no splash pan or for rigid mounting through the pan.



FRONT FENDER
A new modern application—Mounted on front fender directly beneath the headlamps.

Guide LAMP

DIVISION OF GENERAL MOTORS
ANDERSON, INDIANA

UNSURPASSED

TRIPLE-

Flows Freely—
Protects Fully—
Saves Money!



"Anti-Acid"? YES!
"Detergent"? YES!
"High V.I.*"? YES!

ACTION

Last Word in
Engine Protection
for New Car
Customers!



* High Viscosity Index—
means high resistance
to change in body
under extremes of
heat and cold.

● Sell NEW Mobiloil and you offer customers not just one but all three modern oil qualities . . . unsurpassed triple-action protection for even the newest automotive engines.

Sell NEW Mobiloil and you build prestige for all your products and services . . . greater customer-confidence in your entire set-up.

Call your Mobilgas-Mobiloil Representative now! Order NEW Mobiloil!

SOCONY-VACUUM OIL COMPANY, INC., and Affiliates:
MAGNOLIA PETROLEUM CO., GENERAL PETROLEUM CORP.

More than Ever — it Pays to Sell the
World's Best Seller

THE SIGN OF A GOOD DEAL

WILLARD
BATTERIES



- FOR QUICKER SALES
- FOR EASIER SALES
- FOR GREATER ANNUAL PROFIT

Sell
Willard

WILLARD STORAGE BATTERY COMPANY

Cleveland • Los Angeles • Dallas • Memphis • Portland • Toronto

BILL'S SERVICE

the



Here is a typical month's advertising on AC's Profit Boosters, showing how AC constantly drives two kinds of profits in to you . . . sales profits and service profits.

You don't have to handle all AC products, but you're money ahead if you do. Each is a standard replacement item, which requires either a new element or a whole new unit from time to time. Each is of highest AC quality, to heighten your reputation for good service. Each is priced to yield you a generous profit margin.

You can scarcely lift the hood of a car or truck that is not equipped with one or more AC quality products. That proves what engineers and vehicle builders think of them . . . and proves the ready acceptance your customers will give them.

If it's made by AC, it's highest quality . . . and highly profitable to sell and service.

AC SPARK PLUG DIVISION

• GENERAL MOTORS CORPORATION



AC line of --Profit Boosters

IS HEAVILY ADVERTISED



harmony...

● Harmony under the hood. Today's AC Spark Plugs, with patented Coradex Insulators[®] are always in tune with your engine... whether it's cold or hot... loading or under heavy load.

They surpass all previous spark plugs in their ability to fire steadily under a wide range of operating conditions. They remain efficient through substantially longer life.

If you want your engine to sing a sweet song of smoothness and power, get a set of new AC's today.

AC SPARK PLUGS



AN ELEMENT IN YOUR OIL FILTER WILL

Dirt-Proof

ENGINE OIL Put a new AC Quality Element in your oil filter, and you drive with "Dirt-Proof" engine oil. You use less oil and less gas. More power which saves wear, ring clogging, and valve gumming.

If you have no oil filter, get a complete AC Quality Oil Filter—and keep your oil "Dirt-Proof." You'll get expert attention from your AC Service Desk.

AC OIL FILTERS



Mind Giving Me a Push?

THE AC FUEL PUMP SYSTEM KEEPS YOU OUT OF TROUBLE

Don't let the fuel pump be the weak link in your engine. The AC Fuel Pump System keeps the fuel flowing steadily and reliably.

The AC Fuel Pump System is the only fuel pump system that can be installed in seconds. No special tools or equipment are needed.

Don't let the fuel pump be the weak link in your engine. The AC Fuel Pump System keeps the fuel flowing steadily and reliably.

AC FUEL PUMP SYSTEM



AC SERVICE

SPARK PLUG
OIL FILTER
FUEL PUMP

Your "AC Service" Sign is an important element of all AC national advertising. That Sign appears in Saturday Evening Post, Collier's, Country Gentleman, Capper's Farmer, Progressive Farmer, and similar outstanding magazines. It's your tie-up to a tremendous advertising program.

If you don't have this famous Sign, get in touch with your AC supplier.

Be a national advertiser
... display this sign

Put Your Money on the

Thermoid *Pre-Stretched* Fan Belts



Thermoid Radiator Hose



Curved or Straight Hose

The top quality hose made to original equipment specifications. Thermoid Straight and Curved Radiator Hose is built to resist any deterioration and is impervious to chemicals and anti-freeze.

Thermoid is the best name in fan belts. Thermoid's famous pre-stretching prevents stretch, slip, wear and fail, the four steps that, in ordinary fan belts, mean added maintenance costs. Thermoid Fan Belts always stay the correct size.

Insist on Thermoid Fan Belts because it's good business to buy the best! Matched sets are available for belt drive applications where needed.

The Hanging Horse

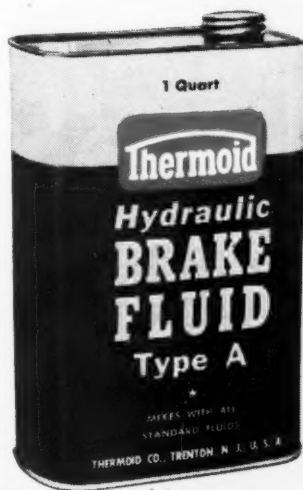
A Thermoid Thermodized Pre-Stretched Fan Belt was removed from service on a car, the weight of a horse suspended on it—and then, when the belt went back on the car, it performed perfectly at the original adjustment.

Thermoid Automotive and Industrial Products

Thermoid Line

Hydraulic Brake Parts and Fluid

Thermoid, the first name in brake linings, offers a complete brake service line to make better customers and better sales. Thermoid Hydraulic Brake Parts and Fluid live up to Thermoid's quality reputation. Thermoid Hydraulic Parts and Fluid match or exceed original equipment performance.



Custom Built Brake Lining Safest Thing on Wheels



Because Thermoid Custom Built Sets plus Precision Processing guarantee perfect brake performance, Thermoid is the big quality name in brake lining, the only brake lining that earns the famous Pittsburgh Testing Laboratory seal of approval.

The Thermoid Line

Brake Linings • Clutch Facings • Fan Belts
Radiator Hose • Hydraulic Brake Parts and Fluid
Car Mats • Thermoid Precision Process Equipment

Thermoid Company, Trenton, New Jersey

SELF-CONTROL STARTS HERE



and to restore
**ENGINE
PERFORMANCE**

OIL-CONTROL STARTS HERE

TO STOP OIL-PUMPING, REPLACE WORN CONNECTING ROD BEARINGS

An oil-pumper can come back and "lower the boom" on you if you neglect to check for—and replace—worn engine bearings on every reconditioning job.

Always check the engine bearings, first cause of oil-pumping. They let excess oil reach combustion chambers where it burns to power-stealing carbon on valves, spark

plugs, pistons and rings. Give new rings a chance to do their own job... replace worn bearings with Genuine Federal-Mogul Oil-Control Bearings. They renew fine engine performance!

FEDERAL-MOGUL SERVICE

(Division of Federal-Mogul Corporation)

DETROIT 13, MICHIGAN



*The Complete Line—
More Than 7000 Numbers*

Engine Bearings (Main, Connecting Rod and Camshaft) • Bushings • Connecting Rod Exchange • Reconditioned Connecting Rods • Rebab-bitted Connecting Rods • Connecting Rod Bolts and Nuts • V-Seam Piston Pin Bushings • Bearing Metals • Laminated Shims

CONTROL OIL-PUMPING

WHERE IT STARTS—REPLACE WITH

FEDERAL-MOGUL

BEARINGS



Save time... save money with

MOPAR

SERVICE PACKAGES



ENGINEERED
by Chrysler Corporation



INSPECTED
by Chrysler Corporation



SUPPLIED
by Chrysler Corporation

...contain all the parts you need
for specific repair jobs on Plymouth,
Dodge, DeSoto and Chrysler products



Through
Dealers

FOR

PLYMOUTH • DODGE • DE SOTO • CHRYSLER CARS
DODGE "Job-Rated" TRUCKS
CHRYSLER INDUSTRIAL ENGINES



10-TON TRUCK CAN'T

NO IFS...NO ANDS...NO BUTS!

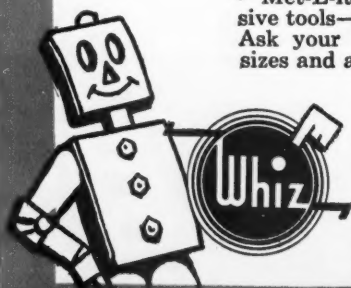
**APPLY Met-L-it AND Met-L-it FIBER
ACCORDING TO DIRECTIONS—AND GET**

GUARANTEED PERMANENT ADHESION

**Here Are More Reasons Why You Can Depend On
Met-L-it for More Profitable Body Repair Work:**

- ✓ **Met-L-it Won't Blister . . .**
You can use any paint or enamel on Met-L-it.
- ✓ **Met-L-it Won't Flake or Crumble . . .**
You can feather-edge Met-L-it perfectly.
- ✓ **Met-L-it Does a "First Class" Job at Less Cost!**
Equals any repair method being used today and lasts just as long.

• Met-L-it doesn't call for special skills or expensive tools—Met-L-it cuts labor and material costs. Ask your WHIZ jobber about Met-L-it package sizes and assortments, and their prices.



PRODUCTS OF

Hollingshead

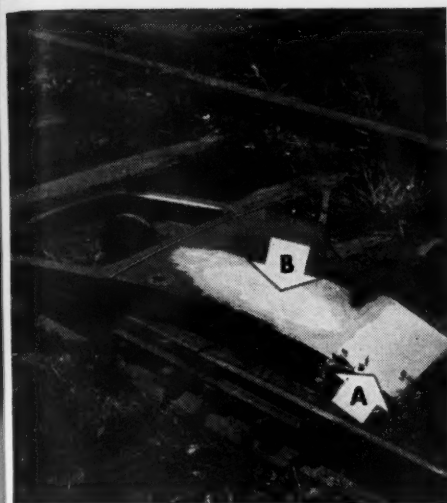
LEADER IN MAINTENANCE CHEMICALS



REPAIRS RUSTED-OUT AUTO BODY AND FENDER SECTIONS—FILLS DENTS AND SCRATCHES

LOOSEN Met-L-it*

HERE'S SMASHING PROOF THAT Met-L-it HOLDS ON!



FIRST WE PATCHED IT!

THE RUSTED-OUT AND DENTED auto door panel shown has been repaired in two ways. Repair (A) was made by covering the rusted-out area with Met-L-it Fiber, and then applying Met-L-it over the Fiber. Repair (B) is a deep dent filled with Met-L-it alone. In both cases the metal was sanded to a clean, bare surface before the Met-L-it was applied. The repairs shown here have been feather-edged just as in a finished job.

THEN WE SMASHED IT!

WE ROCKED A 10-TON TRUCK back and forth over the repaired door. The two big wheels of the truck crushed and crumpled the metal of the door, and strained the Met-L-it repairs far more than the repairs would ever be strained in actual service. The door was bent and twisted—and so was the Met-L-it. These were exaggerated conditions, but we were out to demonstrate PERMANENT ADHESION.

PROVED—PERMANENT ADHESION!

THE Met-L-it AND FIBER STAYED PUT! The tests proved that Met-L-it and Met-L-it Fiber adhere even under exaggerated strains and impact. Notice above that the Met-L-it is still perfectly feather-edged—hasn't cracked or crumbled in any part of the repairs. There is still a perfect bond between the metal and the Met-L-it! That's what we mean by GUARANTEED PERMANENT ADHESION.

NEW DEPENDABLE Product For Cold Metal Repairs!
PUT IT ON RIGHT—Met-L-it STAYS TIGHT



BEFORE APPLYING FIBER, sand clean the metal surrounding the damaged area. Cut the Met-L-it Fiber to shape and dip in a shallow pan of Met-L-it Solvent. Use only Met-L-it Solvent—other solvents will destroy the Fiber's adhesive quality.



APPLY THE FIBER smoothly against the bare metal so that it makes full contact and follows the contour of the body section. When the Fiber has dried thoroughly, feather-edge it to surface contours.



APPLY Met-L-it by brushing, knifing or spraying. Put on several coats, allowing about one minute between coats for drying. Extend the Met-L-it coats about an inch beyond edge of Fiber. Allow to dry well.



SAND Met-L-it with a medium grade sandpaper or disc. Met-L-it will sand down to a perfectly smooth feather edge.

PAINT Met-L-it as you would any bare metal. Met-L-it is not affected by enamel or lacquer thinners, and will not blister or check.

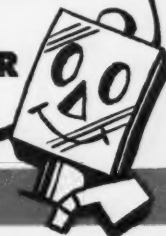


**FOR MORE
INFORMATION
ABOUT**

Met-L-it

**CALL YOUR
WHIZ
JOBBER**

* Patent Pending



OR WRITE

**R. M. Hollingshead Corporation
Camden 2, New Jersey**

Dealers in Canada write to:
**R. M. Hollingshead Company
of Canada, Ltd.
1130 Bay Street
Toronto, Ontario, Canada**

SEALS LEAKING GAS TANKS: AN IDEAL GLAZING MATERIAL—MADE BY THE 70-30 COLD PROCESS

LEAKY WIRING
causes trouble



WITH
CRESCENT
CARS GO OVER THE TOP
"in high"



REMEMBER that ornery, stubborn, obstinate, mean-tempered engine that somehow wouldn't respond to anything you tried? You adjusted the valves; checked the timing; did a complete tune-up; replaced the plugs—yet the customer continued to complain—and rightfully so. The car was sluggish, it had no power, was using too much gas, was just not right—and remember the customer was depending on you to fix it.

Time after time it has been found that such a condition has been due to leaky, worn-out spark plug wires, ignition wires that looked O.K., but weren't.

That's why we say: *Be sure to check the wire on every job!* Field and dynamometer

tests prove that the installation of a new Crescent ignition set often corrects sluggishness, excessive gasoline consumption, and other hard-to-trace power losses.

Good ignition wires and battery cables are vital to quick winter starting and efficient engine performance. The winner and the third and sixth cars at the Indianapolis Race in 1949 were equipped with Crescent Wiry Joe. They know the difference that good ignition wire makes.

Crescent Wiry Joe wire and cables are made by the largest independent wire mill in the world, specializing in a complete line of quality automotive cables. Their proven efficiency and guaranteed dependability mean increased customer satisfaction for you.

THE CRESCENT COMPANY, INC.
Pawtucket, Rhode Island





CONVERT ALL POPULAR CARS and TRUCKS **1942-49** with

*Big Profits
Come Easy!*

A SINGLE KIT CONVERTS
PARKING LIGHTS •
STOP LIGHTS • TAIL LIGHTS
into COMBINATION
DIRECTIONAL SIGNALS

Pathfinder

4-LIGHT
(FRONT AND REAR)
DIRECTIONAL SIGNAL
CONVERSION KITS

No. UN67F

FOR EXTRA PROFITS

DISPLAY

AND SELL

Pathfinder UNIVERSAL DIRECTIONAL SIGNALS

New popular-priced set in wide demand! Consists of 2 clear-lens front lights, 2 red-lens rear lights, Tungsol flasher and fingertip control switch with blinking eye.

Get the sturdy metal self-demonstrator, fully wired . . . FREE (except for merchandise) with stock order for complete sets.



**13 KITS FIT ALL POPULAR
1942-49 CARS AND TRUCKS**

A startling new conversion kit that adds a directional signal system to present car lighting. Double filament bulbs and sockets convert parking lights into combination parking and directional signal lights, and adds a directional signal to present Stop or Tail lights. No mounting of additional equipment . . . no drilling, no tapping needed. Tailored to fit. Conversion kits include directional signal switch, flasher, bulbs, sockets and wiring.

Write Today for Car Application Chart!

Contact your **JOBBER** or
Write, Phone or Wire Now to:

AUTO LAMP Manufacturing Co.

2909 INDIANA AVENUE CHICAGO 16, ILLINOIS



this big
National
advertising campaign
will reach
85,000,000
readers!

put this campaign to work for you! **BE READY WITH**

SEAT COVERS OF SARAN

—they're year 'round sales winners!

Motorists from coast to coast are reading about seat covers woven of saran. Full color national advertising tells them the story of these amazing seat covers that set new sales records wherever they appear. *Your* customers will be shopping for seat covers of saran—are you ready for them?

Saran provides a new seat cover sales story for today's active market. It's the story of *built-in color* that stays bright—beauty that never dulls—unprecedented durability that "takes" the hardest wear—smooth fit that won't stretch or sag—and the easiest care that keeps saran like new. Woven by leading textile mills into a wide variety of eye-catching patterns and weaves, saran means new volume in seat cover sales.

Get ready to supply your customers' demand. Stock seat covers and seat coverings of saran, and display them prominently with hard-hitting point-of-sale material available from your distributor. Put the big saran campaign to work for you!



Saran by National

THE NATIONAL PLASTIC PRODUCTS COMPANY
 ODENTON, MARYLAND • NEW YORK, N. Y. • LOS ANGELES, CALIFORNIA

Manufacturers of Saran Filaments, Nevamar High-Pressure Laminates
 and Wynene Molded Products.

S

A

R

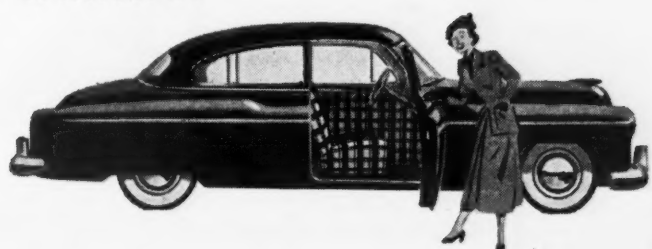
A

N

*your customers
are reading
about it!
they're shopping
for it!*



*...that's why
seat covers
of saran
are year 'round
sales winners!*



KELSEY-HAYES

REMARKABLE



VACDRAULIC

with the New and Exclusive Safety System!



An Outstanding Advancement in Brake Power Units . . . Specially Designed for Light Truck and Passenger Car Hydraulic Brake Systems

- What other brake power units do . . . Model 130 R does better!
- Returns any fluid (escaping in to unit) back into master cylinder!
- Numerous added features assure superior performance, greater safety!
- Cuts in and out faster for better control in traffic and emergency.
- Cuts in lower, yet develops more power under "feather-touch" pressure.
- Less likely to need service than any other brake power unit.

This new Kelsey-Hayes Model 130 R Vacdrylic Brake Power Unit is the only brake power unit on the market engineered to nullify the effects of brake fluid contamination, and its resulting excessive cup wear. By immediately trapping any fluid (which might ordinarily get past the cups) and promptly returning it to the master cylinder, this new Model 130 R lubricates the cups and maintains more than enough power-full braking pressure for any emergency.

Installation kits for all popular makes of cars and light trucks available from your K-H Distributor. Ask him for detailed literature.



The Only
Brake Power Unit
With An Added Protection
Against Fluid Leakage!



ASSURES PROVEN PRODUCTS AT

KELSEY-HAYES WHEEL COMPANY

DETROIT 32, MICHIGAN



PRODUCTS: Wheels—Hub and Drum Assemblies—Brakes—Vacuum Brake Power Units—for Passenger Cars, Trucks, Buses—Electric Brakes for House Trailers and Light Commercial Trailers—Wheels, Hubs, Axles, Parts for Farm Implements.
PLANTS: Kelsey-Hayes Plants in Michigan (4); McKeesport, Pa.; Los Angeles, Calif.; Davenport, Iowa; Windsor, Ontario, Canada.

**6 VOLT
UNIVERSAL
COIL**
\$5⁹⁵ ea.



**12 VOLT
MASTER COIL**
\$12⁵⁰ ea.



6 VOLT—\$10.00 ea.

2

HOTSPARK COILS FOR CAR AND TRUCK REPLACEMENT . . . BECAUSE THEY'RE POSITIVELY MOISTURE-PROOFED!

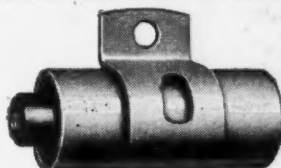
THE UNIVERSAL COIL: A new type coil that overcomes normal spark loss—because windings are evacuated in presence of oil to remove moisture and improve insulation. The bakelite case prevents moisture from seeping into the coil, and also has good insulation qualities. Gives higher output—a better start because of hotter spark. Well balanced windings create more voltage with less battery input.

A Universal Bracket is furnished to make installation on most vehicles. The Universal Coil is especially adapted to automobiles and light duty trucks.

THE MASTER COIL: This new heavy duty truck coil is completely waterproof—with windings sealed in a special transformer oil to prevent short circuits or breakdowns. Windings and oil are housed in a bakelite case. The bakelite is moisture proof and is an excellent insulator. Wire leading to the distributor is also sealed in to make coil waterproof. A "must" for better starting, due to hot spark, which is delivered even with a low battery. The Master Coil has a greater number of turns in the secondary circuit, thereby transmitting more voltage than most heavy duty coils.

Brackets and adapters are furnished to make installation on all makes of vehicles: The Master Coil is especially adaptable to bus, heavy duty trucks, and boats where endurance and super efficiency are essential requirements.

Now included in the Holley Carburetor and Ignition Service Kit . . . Write for information on these faster selling Service Station Items.



**The HOLLEY
CONDENSER**
\$1⁵⁰ each

The Holley Condenser is balanced for both Holley Universal and Master Coils in the six or twelve volt sizes. This Condenser is designed and manufactured to withstand moisture, and any changes in atmospheric conditions.

HOLLEY
Carburetor Co.

5920 VANCOUVER AVE., DETROIT 8, MICH.

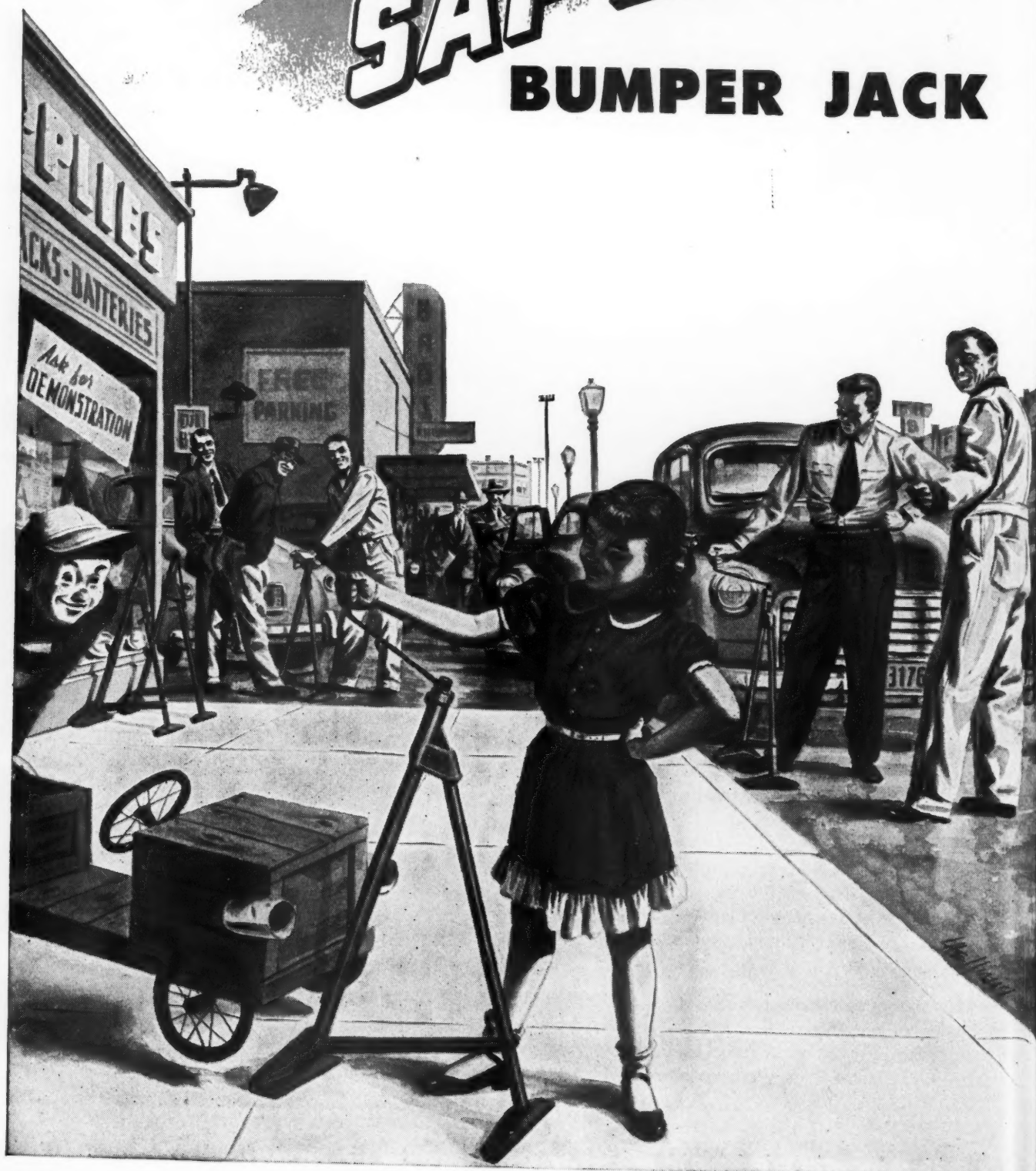
AUTOMOTIVE EQUIPMENT AND ACCESSORIES

THE NEW...

SAF-LIFT

*Pat. Pend.

BUMPER JACK



"STIRS UP" MORE JACK BUSINESS THAN ANY OTHER JACK!

From Connecticut to Michigan to North Dakota, reports echo the sales-making, profit-making advantages of the new Saf-Lift Jack. Even dealers who have never had much success with selling jacks before, find that the new Saf-Lift is a real jack-business builder. Thousands of motorists have already accepted Saf-Lift enthusiastically as the truly safer bumper jack that is so easy to operate.

Everywhere Saf-Lift is demonstrated, it stirs up jack business, because motorists who see it in operation realize that it has everything they've ever wanted in a bumper jack. They like the way it sets up so simply . . . the way its two-leg construction provides extra stability and safety . . . the way it operates without need for awkward stooping . . . the way it folds up, neat as an umbrella!

YOU'LL like the way Saf-Lift stirs up MORE JACK BUSINESS for you, day after day! See this revolutionary jack at your Ausco Jobber TODAY or write for Saf-Lift Catalog Sheet.

AUTO SPECIALTIES MFG. CO.

Dept. MA-12, St. Joseph, Mich.

OTHER PLANTS: *Hartford and
Benton Harbor, Mich.;
Windsor, Ontario, Canada*

Copyright 1949, Auto Specialties Mfg. Co.

What They SAY!



Automotive Distributor, New Haven, Conn.

"The Saf-Lift Bumper Jack moves faster than any other jack in our stock."

Auto Supply Dealer, Chicago, Ill.

"Never in all our experiences have we had a bumper jack that has met with as much approval as your Saf-Lift."



Woman Motorist, Chicago, Ill.

"Today I had an occasion to use one of your Saf-Lift Jacks, and I never changed a flat tire with so much pleasure. Where can I buy one?"

Wholesale Motor Supplier, Bismark, N. D.

"We like the Saf-Lift Jack and expect it to move better than any other make we handle."



Wholesaler of Automotive Equipment, Hazleton, Pa.

"We were so well pleased with the design and adaptability of this jack that we immediately placed our order for 36 jacks. One salesman alone has sold 20 units in one week."



Motorist, Bay City, Mich.

"I saw one of your Saf-Lift Jacks and think it is a wonderful lift. A man traveling doesn't need a cord of wood to block his wheels when using this jack."



Automotive Jobber, Newark, N. J.

"We are selling Saf-Lifts at the rate of 1,000 per month. Our success is mainly due to demonstration selling. Point of sale demonstration by dealers also has proven most productive."

AUSCO

Jacks

Best Ring for Oil Control in

BADLY TAPERED
and **OUT-OF-ROUND**
BORES!

LONG CURVES

INSTEAD OF SHORT CRIMPS

GIVE POSITIVE PRESSURE

TWICE AS MANY SLOTS
CAN'T BLOCK ANY PISTON OIL HOLES

FULL-FLOW SPRING

SINGLE-SLOT SPRING

SEALED POWER MD-50 STEEL OIL RING

The only ring with the FULL-FLOW SPRING

Sealed Power
PISTON RINGS
BEST IN NEW CARS! BEST IN OLD CARS!

BEST FOR OIL WIPING—OIL DRAINING—OIL SAVING!

SEALED POWER CORPORATION • MUSKEGON, MICHIGAN

MOTOR AGE

DECEMBER 1949



NEWSCOOP

The Automotive Service Industries Show will be held in 1950, December 4 to 8th inclusive at Navy Pier, Chicago, Ill. Meeting in Chicago, November 21, the Joint Operating Committee, under whose direction the A.S.I. Show is held, learned the results of the recent poll of the members of the National Standard Parts Association, Motor Equipment Wholesalers Association and Motor Equipment Manufacturers Association. The returns indicated clearly that the majority opinion favored a show in Chicago in late 1950. The industry vote was 4 to 1 in favor of the A.S.I. Show.

Kaiser's Baby

All sorts of reports are flying around Detroit about the Kaiser-Frazer small car project. Some say that two small cars will be put in the line, one a six-cylinder job and the other a four-cylinder and also that there will be deluxe and stripped-down models. K-F is reported to have approached Willys on using the Jeep engine, but there has been no confirmation of that report. Judging from what tool and die shops in Detroit say, however, the car will not likely come out before next summer.

FRB Forecast

Although half the postwar new cars have gone to buyers with \$5000 a year or more income, the Federal Reserve Board has renewed its forecast of a continued strong market for both new and used cars for the next 12 months or more. Its basis for this belief is: a) buying power (assets and credit) is greater than prewar; b) ownership rate in lower fifth income bracket (mostly used cars) increased with more than doubling of prewar income; c) frequency of all ownership same as prewar although population has increased; and d) 7 out of every 10 cars are 7 or more years of age.

"Stock" Car by Nash Dealer

One free share of common stock in Nash-Kelvinator Corp. with each purchase of a new Nash . . . This novel offer served to introduce a new West Coast Nash dealer and the new 1950 models. During a thirty-day period, the dealer presented each buyer of a new Nash with a share of stock.

Women Are Wonderful

An analysis of women's driving characteristics points to the male motorist as the deadlier of the species. Here's the evidence compiled by the Automobile Club of Southern California: The typical woman motorist in California drives about one-half as many miles annually as her male counterpart, represents about 30 per cent of the registered motor-vehicle operators in the state, but is involved in only one out of seven traffic accidents and one out of 11 traffic fatalities. Female drivers average 44 mph on the open highway to the male's 47 mph. Feminine motorists are infrequent traffic violators, receiving only one out of every 30 citations issued. The survey also says talkativeness is an important factor in women's shortcomings on the road.



Scrappage Rate

A tremendous automotive service business is indicated by scrappage figures compiled by R. L. Polk & Co. for the twelve months between July 1, 1948, and the same date this year. The study shows that while total registrations increased by 10 per cent or about 3.6 million vehicles, passenger car scrappage was less than half the normal prewar rate. Consequently a far larger percentage of older cars is included in the present automobile population, providing a large pool of service work for repair shops. The low scrappage rate indicates that the demand for new automobiles has not yet been filled. A surprising result of the study is that truck scrappage during the 12 months' period rose to 471,000, or nearly twice the prewar annual average of 249,000.

Pontiac vs. Buick

Look for an all-out sales fight between Pontiac and Buick divisions during the next couple of years for fourth place in total passenger car production. Buick occupies the spot now by a rather substantial margin, but Pontiac is definitely out to bump its sister division out of that position. Actually, competition between divisions in GM can be, and often is, as bitter as it is with outside companies.

Dempsey's Race Film

Jack Dempsey, former world's heavyweight champion, is producing "The Big Wheel," a movie about big car racers actually filmed at the Indianapolis 500-mile classic and the nation's top speedways. Mickey Rooney stars as a driver who is fast on the turns and faster on the "curves." Thomas Mitchell co-stars with a cast of favorites including Michael O'Shea, Spring Byington, Mary Hatcher, Hattie McDaniel, Steve Brodie, Lina Roday, Allen Jenkins and Dick Lane.

Repair Business

Latest estimates indicate that the total automobile repair parts business this year will hit approximately \$2 billion, or about 20 per cent under the all-time peak of 1948. By comparison with prewar standards, however, the \$2 billion total still is phenomenal being considerably more than twice what it was in 1941, the highest year up to that time, when it was \$718 million.

It's a Fact...

- ★ . . . that assuming no time out for strikes, vacations, or shutdowns, but no overtime, slightly over 2800 motor vehicles will have been turned out every hour during 1949 or nearly 47 every minute of a 40 hour week, 52 week year.
- ★ . . . that 1949 passenger car registrations will be around 35,556,000 and trucks (including buses) 7,873,000, an increase in motor vehicle registrations of 7.3 per cent over 1948.
- ★ . . . that tire replacement sales during 1950 should show a substantial increase over those of 1949.
- ★ . . . that during the first 8 months of 1949 automotive wholesalers' sales (exclusive of new vehicles) amounted to an estimated \$1,411,000,000.
- ★ . . . that there are now approximately 45,200 car and truck dealers in the country, the highest number since the end of 1937 and about 13,000 more than the low point at the end of 1944.
- ★ . . . that if your Christmas Cheer depends upon good business, you should have a Merry one.

by M. A. Beechwood

Predictions...

Exclusive Dealerships

Trouble may be brewing for automobile manufacturers and dealers on the question of exclusive dealerships. Harley-Davidson Motorcycle Co. currently is involved in a fight with FTC on that point and the outcome may be significant for automobile dealers. Another indication of the government's thinking was given by J. Howard McGrath, U. S. Attorney General, recently in an interview in a national news publication in which he said the car manufacturers might have to change their contracts in regard to exclusive representation. Standard Oil recently lost a court fight on exclusive dealerships and was forced to change its franchise contracts, he said.

1950 Announcements

Chrysler divisions will introduce their 1950 models shortly after the first of the year. It is understood that changes will be made in styling, especially in the rear roof and trunk lines and possibly in the fenders.

Hudson Small Car

Announcement of the new Hudson smaller car reveals that it is neither a small car nor in the low priced field. Both in wheelbase and in price it falls into the medium price class. Although 4 inches shorter in wheelbase and from \$250 to \$275 lower in price than the conventional Hudson line, in price it is practically identical with the Buick Special and somewhat higher than Pontiac, Dodge, Studebaker Champion and the Nash Statesman. Factory list prices are \$1675 for the 3-passenger coupe; \$1775 for the 2-door brougham, and \$1795 for both the 4-door sedan and 6-passenger coupe. Federal, state and local taxes, transportation and dealer handling charges are extra.

Dividends Rise

Second quarter profits (after taxes) reported by United States manufacturing corporations were off 16 per cent from the first quarter and 29 per cent from last year, according to the Securities and Exchange Commission. Despite this fact, however, dividend payments rose by 5 per cent although the smaller corporations nearly all paid less than for the first quarter.

★ that with considerable speculation floating around Detroit about the name Chevrolet will hang on its new torque converter to be announced on 1950 models, my guess is "Power-Glide."

★ that at least one company with an automatic transmission as standard equipment on its high priced models will reverse its field and go back to offering the unit as optional equipment, in order to advertise a lower delivered price on the car.

★ that Chrysler will have a hard top convertible in its line in 1950.

by Peter Folwell

Tire Price Increase

With the second round of replacement tire price increases already well under way, one of the smaller companies is talking about a third increase some time next spring. Goodyear started the first price boost late in October which was followed generally in the industry, and Sieberling Rubber Co. touched off the second Nov. 25. Both the first and second round price hikes amount to 3½ per cent each.

R.I.P.?

Following failure of a dealer group to come up with a tangible proposal for reorganization of the Playboy Motor Car Corp., a federal court in Buffalo early in November set Nov. 28 for a final hearing on the company's affairs. It was presumed that the only alternative for the company would be bankruptcy. A spokesman for the dealer group said RFC had rejected application for a \$3.5 million loan. The company was put into federal court trusteeship last year and the latest report of the trustees was that the company's liabilities were about \$2.4 million, with physical assets valued at \$50,000.



Dealer Inventories

Retail inventories of motor vehicle dealers rose by \$50 million during September, accounting for a third of the total business inventory increase for the month. Manufacturer's inventories went down as the wholesalers and retailers replenished cleared-out stocks. National totals, as of October 1—wholesale and retail, \$23.6 billion; manufacturers', \$31.2 billion, according to the Office of Business Economics.

Oil Change

There is a growing trend among automobile manufacturers toward the two thousand mile oil change. The number recommending that mileage between oil changes will be increased by at least five to a total of 11 when 1950 models are announced and another is expected to join the parade soon. Most of the companies involved are increasing the interval to two thousand miles from one thousand miles, while two companies actually are reducing the recommended oil change interval to two thousand miles.

Top Material

One manufacturer of high priced automobiles is considering use of a new type material for convertible tops. It consists of a fibre glass fabric impregnated with a coat of vinyl plastic. It is reported that the material does not stretch and will not crack at low temperatures nor become tacky under heat. The big problem at the moment is in fitting the material during installation since it does not stretch, but it is believed that the problem will be overcome.

Average Weekly Wage

Both employment and average weekly wages were up for the nation just prior to the beginning of the coal and steel strikes, according to the Bureau of Labor Statistics. Employment in early September was up 500,000 to about 43,000,-

000 in non-agricultural fields. Factory wages averaged \$54.60 a week. During October, however, lay-offs resulting from the strikes averaged 80,000 weekly (gauged by new applications for unemployment compensation which did not accurately reflect the much greater totals).

Self-Service Stations

Self-service gas stations must now advertise the price per gallon as well as the savings per gallon, according to a ruling of the Appellate Department of the California Superior Court. Serve Yourself Gasoline Stations Association, Inc., was denied an injunction to prevent the State Department of Agriculture from enforcing a statute requiring gas station owners to post price as well as savings per gallon.

Farm Facts

Nearly half of the United States farms have a truck or trailer, according to a survey by the Bureau of Agricultural Economics. As of Jan. 1, 1949, it was estimated that the total was more than 1.9 million, a 28 per cent increase since 1945. One farm in every four had one (one out of five in the South) with two out of five having a capacity of a half-ton or less.

As Tires Go

Tire shipment statistics show that original equipment demand for passenger car sizes reached an all-time peak level during mid-1949. This trend is expected to continue for several months. The demand for original equipment truck tires, however, is low and shows no signs of improvement. Replacement demand for all classes of tires is running below estimates made earlier in the year.

Retail Sales Rise

October independent retail sales were 6 per cent less than a year ago, according to the Census Bureau. Motor vehicle dealers alone of major groups showed an increase (15 per cent) although labor troubles caused sales to dip 1 per cent below September. Filling station sales were up 3 per cent for the month but off 2 per cent from last year. At the same time, chain and mail order stores were off 3 per cent from last year.



EDITOR'S NOTEBOOK



Frank P. Tighe
EDITOR

Dear Motor Age Reader,

SAFETY maintenance—the job of keeping cars in safe running order—is essential in highway safety all year 'round but particularly in winter months when the motor vehicle death rate is higher than at any other time of the year.

Reduced visibility and long periods of darkness during peak traffic hours and the hazards of snow and ice are victors over the unsafe car. It's just as important for your customers to know that while "care will save your car," "care will also save your neck!"

You have the ability and experience as well as the right tools and equipment to keep cars safe. Remind every anti-freeze buyer that his car needs the overall protection of a winter safety check-up.

Watch Credit Terms

FRED L. HALLER, first vice-president of National Automobile Dealers Assn., wisely observed that car dealers should sell automobiles rather than convenient credit terms. Addressing dealers at the Automotive Trade Association of Virginia last month, Mr. Haller said:

"... Selling terms instead of selling automobiles has never been sound merchandising, and if too much of it is done, you may be

faced with controls which can seriously affect your ability to serve worthy customers. For the good of the economic condition of the country and of our industry, don't buy orders, **SELL THEM**; and don't sell terms, sell automobiles!"

Hot Town for Hot Cars

CHICAGO police are confronted with a new all-time record for the number of automobiles reported stolen in one year. For ten months

of 1949 reported thefts have averaged 25 a day.

If the rate prevails for the entire year, the number will reach 9125—more than two and one-half times the previous record of 3401 cases set last year.

This is a problem to which the automotive trade should address itself. Cooperation with police authorities in your community to aid in stamping out this unholy racket should be every automobile man's civic responsibility.

A man with both feet on the ground doesn't have too far to fall.

Now Is the Time . . .

IN a very short time, we'll all be gathered around the Christmas Tree, and that pleasant custom of extending good cheer and best wishes will be at hand.

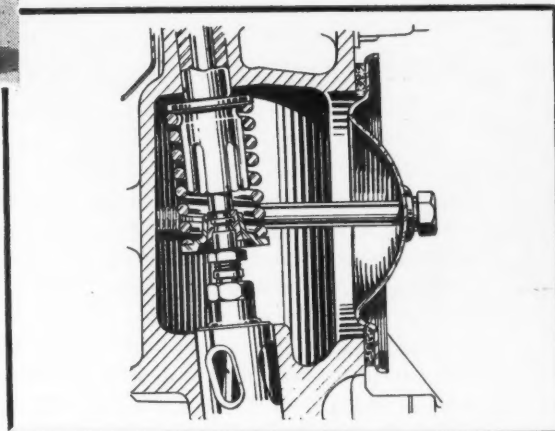
We of **MOTOR AGE** would like to pause and send **SEASONS GREETINGS** to all of our friends. May yours be a Happy and Blessed Christmas and may 1950 be a bang-up year for your business. In a word, may your book for 1950 be one without an unhappy ending. Your check-book, that is.

1950 NEW CAR



Left. With the new front end treatment, shown here on the 1950 Pontiac Chieftain four-door sedan, the main grille bars are extended out and around the fenders.

Below. The new valve-tappet access door is located inside of the right front fender, making tappet adjustments more convenient.



Interior refinements and increased output of the eight cylinder engine mark 1950 Pontiac

• PONTIAC •

FOR 1950, Pontiac offers the Chieftain and Streamliner Series in Deluxe and standard models with six- and eight-cylinder engines, and with Hydra-Matic transmission as optional equipment. Appearance has been freshened by a new grille having heavier horizontal bars and with the main grille bar extended to wrap around the front fenders. Parking lamps are new, mounted between the bumper and main grille bar below the headlamps.

The most important mechanical change is found in the stepping up of output of the eight-cylinder engine by a $\frac{1}{8}$ -in. increase in bore, displacement being upped by 19 cu. in. Standard compression ratio for both six- and eight-cylinder engines is 6.5 to 1. The six is rated 90 bhp (max.) at 3400 rpm; while the eight is upped to 108 bhp (max.) at 3600. A special 7.5 to 1 com-

(Continued on page 108)

Engine Specifications

	Six	Eight
Type.....	L-Head	L-Head
Bore (in.).....	3 $\frac{3}{16}$	3 $\frac{3}{8}$
Stroke (in.).....	4	3 $\frac{3}{4}$
Displacement (cu. in.).....	239.2	26.8
Bhp (max.)		
Compression Ratio		
6.5 to 1.....	90 @ 3400 rpm	108 @ 3600 rpm
7.5 to 1.....	93 @ 3400 rpm	113 @ 3600 rpm
Torque (max.)		
lb. ft.	178 @ 1200 rpm	208 @ 1800 rpm
Compression pressure (lb.).....	191 @ 1000 rpm	190 @ 1000 rpm
Firing order.....	1-5-3-6-2-4	1-6-2-5-8-3-7-4
No. main bearings.....	4	5

Show Room

Right. The 1950 Ford Custom Deluxe Club Coupe, showing the new grille treatment and repositioning of the parking lights.

Below. Ford's Custom Deluxe Fordor sedan for 1950. Features of the new Ford line include restyled interiors and many changes in outward appearance.



Ford features body improvements and smoother operation of engine

FORD.

IN announcing the 1950 Ford line of passenger cars, the Ford Motor Company describes the engine as offering a smoother flow of power in the V8 and a quieter operation in both the V8 and six cylinder cars. Mechanical improvements and styling refinements are the features which are offered in the 1950 Ford.

Included among the engine improvements in the 1950 Fords are a new camshaft timing gear made of laminated composition, which is said to give quieter operation than the former aluminum gear. An autothermic type of piston is being used which is claimed to control expansion and contraction and to eliminate piston slap. A new camshaft, designed for quiet operation, features a longer opening and closing ram which eliminates tappet blazes. Also, Ford claims increased car economy as the result of (1) addition of an

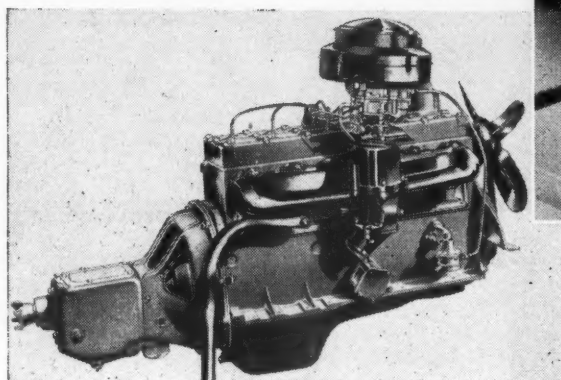
(Continued on page 100)

Engine Specifications

	Six	Eight
Type.....	L-head	V-8 L-head
Bore (in.).....	3.30	3 ³ / ₁₆
Stroke (in.).....	4.40	3 ³ / ₄
Displacement (cu. in.).....	225.8	239.4
Bhp (max.) (bare engine).....	95 @ 3300 rpm	100 @ 3600 rpm
Torque (lb. ft.) (max.).....	180 @ 1200 rpm	181 @ 2000 rpm
Compression ratio.	6.80 to 1	6.80 to 1
Number of main bearings.....	4	3

1950 NEW CAR *Show Room*

The Model 500 offers a shorter wheelbase, a smaller engine, and a lower price tag than other Hudson models



Left. The six-cylinder, 112 hp engine has a compression ratio of 6.7 to 1, 7.20 to 1 under the aluminum high compression head is used.

Above. The 1950 Hudson 500 four-door sedan, shown here, has a wheelbase of 119 $\frac{7}{8}$ inches.

• HUDSON •

HUDSON'S lower priced car, the Model 500 Pacemaker, retains all of the characteristic styling of current Hudson cars. The basic change is in wheelbase which is 119 $\frac{7}{8}$ in. as compared with 123 $\frac{7}{8}$ in., a reduction of four inches. This has brought with it a correspondingly shorter hood, shorter front fenders, and a reduction in overall length.

In making this change, Hudson was enabled to take full advantage of its one-piece body construction. By leaving the basic structure unchanged from the cowl to the rear end, body fabrication is exactly the same as standard. The forward section of the unit body and frame consists of a separate front frame section. This is made correspondingly shorter for the model 500

Engine Specifications

Type.....	L-Head
Bore (in.).....	3 $\frac{9}{16}$
Stroke (in.).....	3 $\frac{7}{8}$
Displacement (cu. in.).....	232
Bhp. (max.) (bare engine).....	112 @ 4000 rpm
Torque (lb. ft.) (max.).....	165 @ 1600 rpm
Compression Ratio:	
Standard.....	6.7 to 1
Optional (with aluminum head).....	7.2 to 1
No. main bearings.....	4

without affecting assembly procedures. The only additional sheet metal change required for this model is a dash panel with a depression at the center to permit clearance for the power-plant.

(Continued on page 104)



Upper right. Improved performance and appearance are claimed for the 1950 Mercury, shown here in the six-passenger coupe model.



Below. As seen here, the 1950 Mercury emphasizes its horizontal lines by incorporating larger oblong chrome parking lamps into the grille.

Engine Specifications

Type.....	V-8 L-head
Bore (in.).....	3 $\frac{3}{16}$
Stroke (in.).....	4
Displacement (cu. in.).....	255.4
Bhp (max.) (bare engine).....	110 @ 3600 rpm
Torque (lb. ft.) (max.).....	200 @ 2000 rpm
Compression ratio.....	6.80 to 1
Number of main bearings.....	3

•MERCURY•

Improved oil economy and new interior appointments are among features offered in Mercury

IMPROVEMENTS in appearance and comfort are among the features presented in the 1950 line of Mercury cars, it was announced by the Lincoln-Mercury Division of the Ford Motor Company. The front end appearance is retained while the horizontal lines are emphasized in larger, oblong, chrome parking lights. Interior changes have also been made, which include new door locks, new instrument panel, and refinements of interior trim.

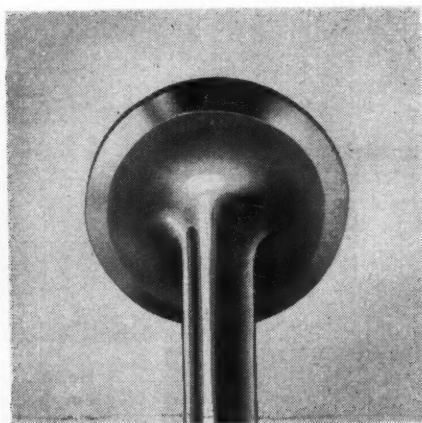
Latest in developments in the engine design are claimed to give the 110 horsepower Mercury engine added performance, economy, and quietness. A new timing gear made of laminated composition, reduction in cam speed, and a new three-point barrel edge belt drive are among the me-

chanical changes. Also, an oil-squirt hole has been added in the connecting rod to provide instant lubrication of the cylinder wall after a cold start. A new cylinder wall finish will improve oil control, new rubber seal rings on the intake valve stem guide, and new chrome-plated top piston rings are also designed to prolong engine life and to insure greater oil economy.

Other engine improvements include a new oil bath air cleaner with improved sound absorbent chamber, improved installation of high tension wires to spark plugs to prevent cross fire, and relocation of the oil filter off the head bolt to insure proper tightening.

The heater has been relocated from the pas-

(Continued on page 102)



Valve Failures

... Cause and Cure

To assure a top-notch valve job, it is important to know what causes valve failure and how to prevent it

ONE of the most common jobs in major engine work is a valve job. Noisy operation and poor performance of an engine are often traced to valves which need grinding and reseating. Causes of valve trouble should be thoroughly understood so that mechanics will know how to do a longer lasting job and will be able to prevent premature failure of the valves.

No matter how good may be the condition of the rest of the engine, if the valves are burned, carboned up, or seating improperly, performance is bound to be poor. If tappets are improperly adjusted, operation is bound to be noisy. Since valves control the flow of gas, from which the engine derives its power, they *must* operate exactly as specified or performance suffers badly.

All internal combustion engines are equipped with an exhaust and intake valve for each cylinder. The intake valve admits the gas mixture and the exhaust valve lets the burnt mixture out of

the combustion chamber.

The most important causes of valve failure are excessive heat and poor seating. Poor seating, in time, is usually caused either by improper tappet clearance or by carbon formation under the head.

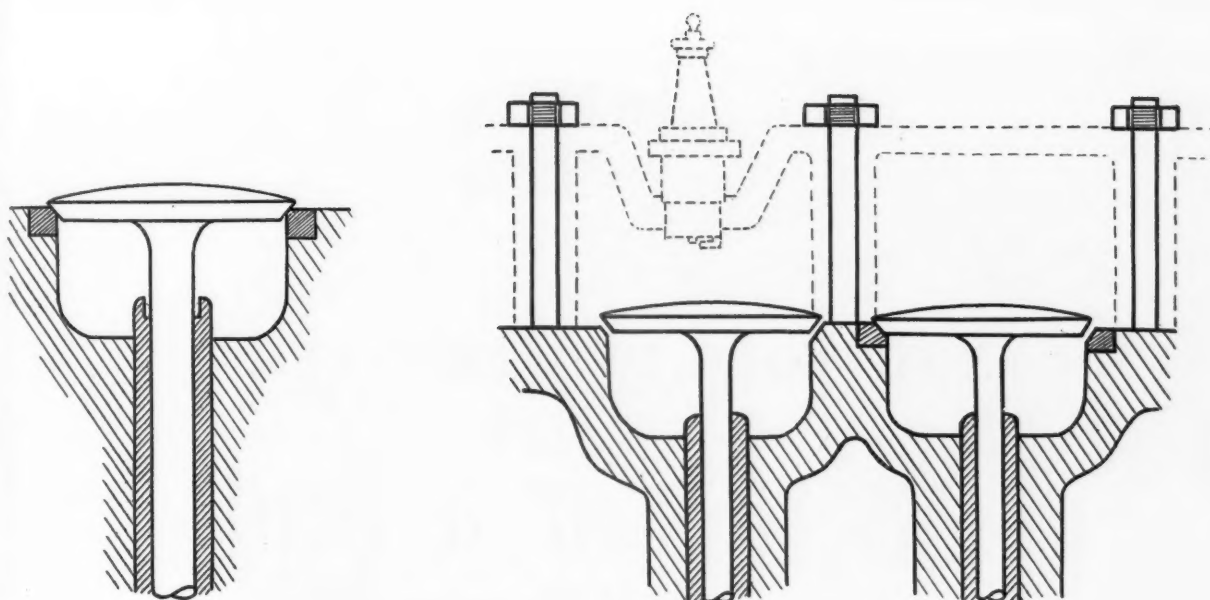
Through experiments and tests it has been found that the valves operate in temperatures from 2,000 degrees F. upwards to 3,800 degrees, which is higher than the melting point of some grades of steel. This extreme localized heat presents only a momentary contact with the valve due to the speed at which the valves are operating.

A valve that is correctly designed and adjusted will help to control these temperatures and no damage will result as the steel used in modern

(Continued on page 80)

by
Jack

Montgomery
Technical Editor

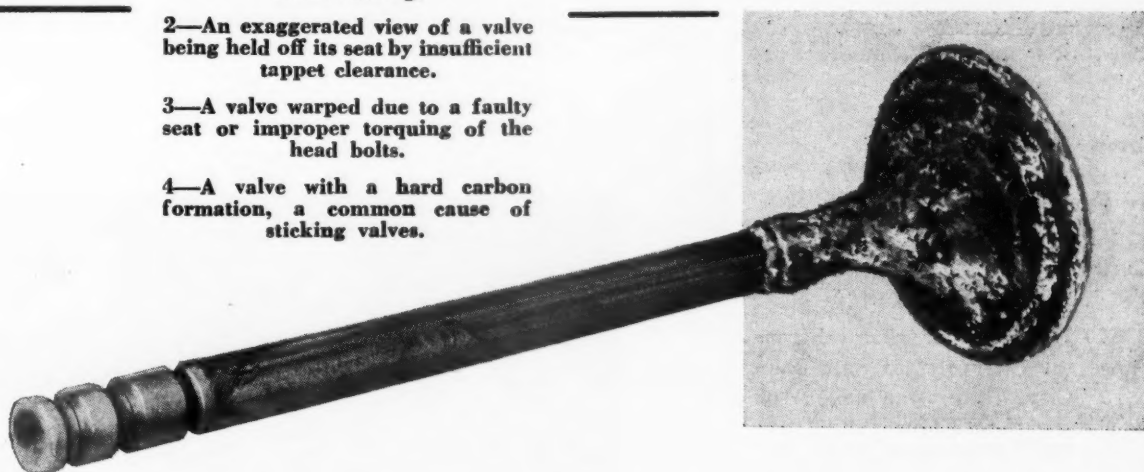


1—Countersink the valve guide, as shown above, to prevent the valve from sticking.

2—An exaggerated view of a valve being held off its seat by insufficient tappet clearance.

3—A valve warped due to a faulty seat or improper torquing of the head bolts.

4—A valve with a hard carbon formation, a common cause of sticking valves.



Valve Seat Angles and Tappet Clearances on All Post War Passenger Cars

	SEAT ANGLE (Degrees)		CLEARANCE (Inches)			SEAT ANGLE (Degrees)		CLEARANCE (Inches)	
	Intake	Exhaust	Intake	Exhaust		Intake	Exhaust	Intake	Exhaust
BUICK—40-50 Series, 1946-49.	45	45	.015H	.015H	LINCOLN—1946-49	45	45	HA	HA
All Models with Dynaflo...	45	45	HA	HA	MERCURY—1946-49	45	45	.011	.015
CADILLAC—1946-48	45	45	HA	HA	NASH—4860, 1946-48	45	45	.015H	.018H
All Series, 1949	44	44	HA	HA	Six, 1946-48	45	45	.015H	.015H
CHEVROLET—1946-49	30	30	.006H	.013H	Six, 1940-1949	(d)	(d)	.015H	.015H
CHRYSLER—1946-49	45	45	.008H	.010H	Ambassador 4960-1949	(d)	(d)	.015H	.018H
CROSLEY—1946-49	45	45	.007C	.007C	OLDSMOBILE—76, 1946-49	30	45	.008H	.011H
DE SOTO—1946-49	45	45	.008H	.010H	Futuramic 88 and 98-1949	45	45	HA	HA
DODGE—1946-49	45	45	.008H	.010H	PACKARD—Super 8, 1949	30	45	.007H	.010H
FORD—6 cyl. 1949	45	45	.010	.014	Custom Eights, 1946-48	30	45	HA	HA
6 cyl. 1948	45	45	.013	.013	Eight, 1948-49	30	45	.007H	.010H
V-8, 1946-49, 6 cyl. 1946-47	45	45	.011	.015	PLYMOUTH—1946-49	45	45	.008H	.010H
FRAZER—1947-49	30	45	.014C	.014C	PONTIAC—1946-49	30	45	.012H	.012H
HUDSON—Sixes, 1946-49	45	45	.010	.012	STUDEBAKER—1946-49	45	45	.016C	.016C
Eights, 1946-49	45	45	.008H	.008H	WILLYS—1946-49	45	45	.014	.014
KAISER—1947-49	30	45	.014C	.014C					

(d) = 45 deg. in Block—40 deg. Valve face.

HA = Hydraulic Automatic Adjustment.



“KNOW YOUR DEALER WEEK”

A Success or a Dud

A survey shows that participating dealers reaped a harvest of public good-will

by Frank P. Tighe, Editor

WHEN Frank Streater, Streater Chevrolet of Salt Lake City, Utah, was asked for his comments on Know Your Automobile Dealer Week, he said, “I believe dealers got out of it exactly what they put into it and that the results will be far-reaching.” That just about summarizes the results of National Automobile Dealers Association’s effort to get the American public to know and to understand the car dealer as a friend and neighbor, as a business man with whom the public can deal with confidence.

J. Eustace Wolfington, N.A.D.A. committee chairman and prominent Philadelphia DeSoto-Plymouth dealer, stated that the Week was “an excellent demonstration of what dealers can accomplish when they work together; and we are confident that the benefits they have realized, and will continue to receive, from this program will repay the participating



Above. The Utah Automobile Dealers Assn. had open house at which time Pauline Peterson was chosen as their queen. Wm. P. Ralph, the association vice-chairman, stands at the center with L. W. Elledge, chairman, at the right.

dealers many fold. . .”

MOTOR AGE surveyed seventeen cities across the nation and in addition had the benefit of comment from national, state and local dealer associations.

“It was a dud in Denver,” our reporter told us. But in Smithfield, N. C., eight dealers



Above. Left to right, Amos T. Crowl, San Francisco Motor Car Dealers Assn. Mgr., and Police Commissioner Maginn stand with Lonie Blackman, queen of the week's festivities. Mayor Robinson stands on Lonie's other side.



Above. A parade of 1950 models as presented at the Smithfield, N. C., Automobile Dealers Association Dance.

sponsored a free public dance, complete with refreshments and prizes. On display at the dance hall were new model automobiles and more than a thousand townsfolk turned out. It was a howling success.

North Carolinians really learned about the important part that automobile dealers play

in the economic life of North Carolina . . . where car dealers pay an annual wage check approaching \$60,000,000 with some 76,725 employees and their families dependent on the new car retailers of that state. In Yanceyville, N. C., all dealers attended the Rotary Club meeting where one of their group, H. S. Mobley of Greensboro told the story of the automobile dealer. So it was in Charlotte, Rocky-Mount, Winston-Salem and elsewhere in the Tarheel state.

In Arizona, the program was discussed but the dealers didn't want to climb on the wagon.

Bisbee, Arizona was the only town in the state to grab hold of the idea and make a go of it, our reports show.

San Francisco dealers, however, organized a parade with seventy-five new cars in the lineup. Sixteen sleek convertibles purred up Market

(Continued on page 92)



The boys were so startled they couldn't even drop the tree.

Pop Finds

Pop really became a Santa Claus

THE Christmas spirit had reached Pop O'Neill's warm old heart. He and Tommy Winters, his apprentice, were busy decorating a tree in the show window of Pop's Repair Shop. They had finished stringing the lights and putting on the shining ornaments and were carefully draping silvery rain from the tips of the branches.

The unmuffled roar of a jalopy way up the street came clearly through the window and Tommy stopped to wave as the badly mis-treated '37 Buick came closer. The two high school boys, pilot and co-pilot, waved back and the jalopy emitted some sort of hoarse windy shriek. With a pop, a skip and a thump or two the red and yellow traffic stopper disappeared up the street.

Pop shuddered at the sight and sound, but a misty look came into Tommy's young eyes.

"Well," remarked Pop with a sigh of relief, "that *was* something!"

"You bet," agreed Tommy fervently. "It sure was!"

"There ought to be a law against paintin' cars up so they hurt people's eyes," Pop continued. But Tommy said nothing and when Pop looked toward him he saw that Tommy was a becoming shade of pink. "Matter of fact," added Pop. "Guess they've already got a law. Anybody who'd paint a car up like that could be committed to a booby

Grounds for Trouble

when he felt the Christmas spirit, giving away the fruits of his land and labor

by Charles M. Kenyon, Managing Editor

hatch. What do you think?"

"Oh, I don't know," said Tommy, very busy taking the kink out of a straight piece of tinsel.

"I don't know what kids is comin' to," Pop continued. "In our time we didn't do things like that. Did you?"

Tommy swallowed once or twice before he answered. "Yep," he said at last. "I guess I did. That Buick used to be mine before I painted it up and sold it to Willie Heintz. First car I ever owned—an' I still like it."

"As I was sayin'," remarked Pop. "Let's steal a minute of the boss' time an' I'll buy you a cup of coffee."

"Make it milk," said Tommy. "I'm still pretty young."

As they started to walk toward the diner, Pop called to Larry Tate that they'd be gone for a few minutes.

"You know, Pop," Tommy said as they walked across the driveway. "I'll bet I even know where that car was goin'. Every year for a long time that car has gone after the Christmas tree to decorate the gym for the high school dance. That's where Willie and Dick are off to now. Up in the hills to get a tree."

When they came back, Larry was waiting for them. "Phone call from the Mrs., Pop," he said. "Someone's car broke down up by your house. It won't start but the battery seems to be o.k. they said. Want me to go get 'em?"

"No," said Pop. "I'll take a run up myself an' you can get the head on Mrs. Phillips' car before five. What kind of a car is it?" he asked.

"'37 Buick," replied Larry as he went back into the shop.

Ten minutes later Pop was driving up the pleasant country road which ran by his home. Just before he got to his own house, he drove past the wood-lot which was his pride and joy. As he let his eye rove over it, he happened to

catch a glimpse of red and yellow. He jammed on his brakes and took a better look. Sure enough, it was the jalopy. He parked the tow car and walked in to see what was going on. As he rounded a clump of cedar trees he came on two boys struggling to carry a fine Balsam fir back to their car.

"Hello, boys," said Pop in his deepest voice. "Having a little trouble?"

The boys were so startled they couldn't even drop the tree, but the tallest one recovered fast. "Hello, Mr. O'Neill," he said. "Our car won't start."

Then he grinned. "For a minute there you had us worried. We thought you might be the man who owned this place."

"I am," said Pop.

"Oh, gee," said the smaller boy.

"He's just fooling," the tall boy explained to him. "He owns the repair shop that lady phoned."

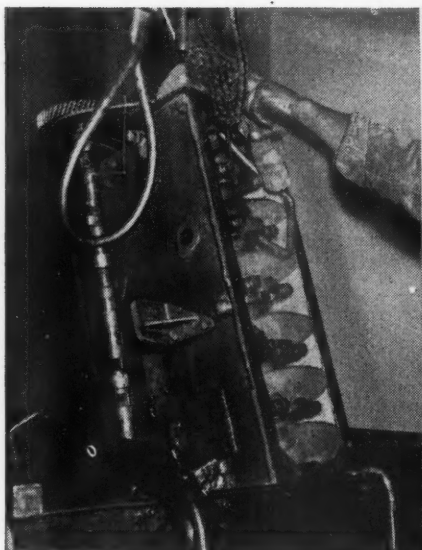
Pop, usually a bit hot-tempered about trespassers, recalled what Tommy had told him about the high school dance and held his peace. "Let's take a look at the car," he said and walked over to raise the hood. When he stepped on the starter nothing happened. So Pop brought over his jumper battery and gave her the hot shot.

"Drive 'er back to the shop," Pop ordered Willie. "We'll have to look at that starter motor. An' be careful of that tree," he added sadly. "I'll bet the owner'll really miss that one."

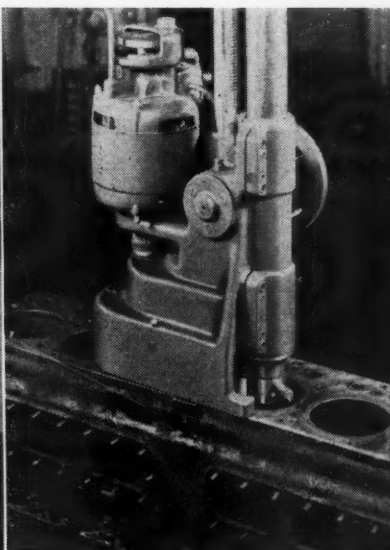
At the shop he pulled the starter, turned the

(Continued on page 88)

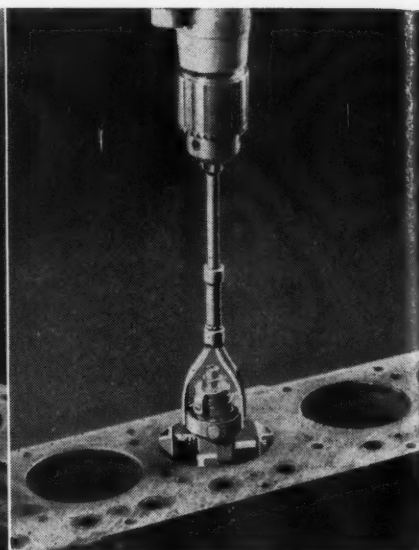




The block and all parts to be used in the rebuilt engine are cleaned in a solvent tank.



Cylinders are reconditioned with a boring bar of the type shown above.



After reboring, the cylinder walls are honed to provide a satin-smooth finish.

Approved Engine Rebuilding As

discussed and illustrated on these pages, follows methods which have proved successful in the machine shops of members of the Automotive Engine Rebuilders Association . . . by Arthur H. Nellen, Jr.

MOST repair shops have numerous occasions to sell a rebuilt engine when a customer's engine is beyond normal overhaul condition. Every shop should know, therefore, exactly how an engine is rebuilt so that mechanics or service salesmen can fully inform the customer as to what he's getting.

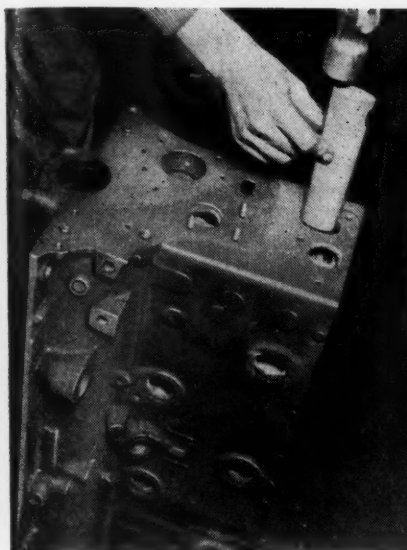
When an engine comes to a rebuilder, it is stripped down to the bare block and inspected. If it is free from cracks, all freeze plugs are removed to insure thorough cleaning, and the block is placed in a large solvent tank.

In the meantime, all parts to be used again

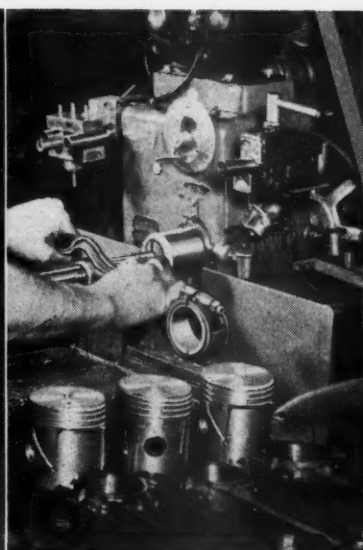
are cleaned and inspected. Valves, valve springs, connecting rods, pistons and pins, all bearings, timing gears and chain, gaskets, water distribution tubes, and so forth are all junked.

When the block is removed from the tank, it is further inspected for cracks that may have been hidden under grease and grime. It is sometimes done visually and sometimes the pressure test or the Magna-Flux method. If the block is solid, the cylinders are measured for wear, taper, and out-of-round, and marked for reboring. If over .065 oversize is necessary, the block is bored

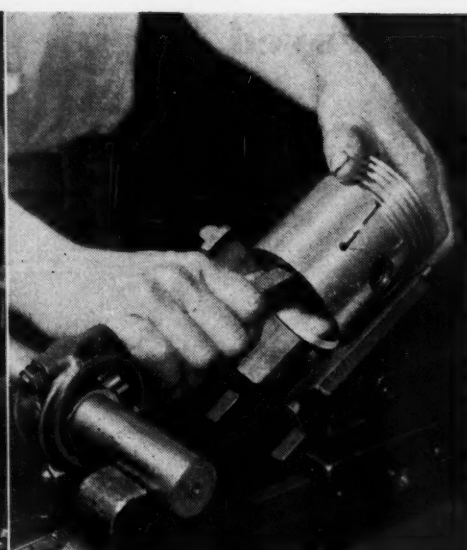
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Installing a new water distribution tube in the block.

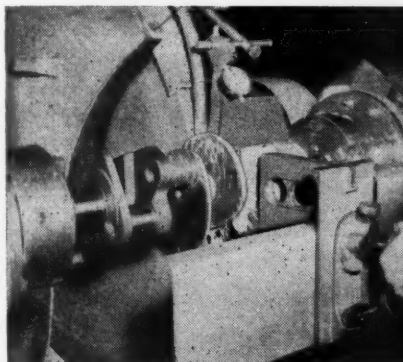


Pin fitting is done on up-to-date machines.

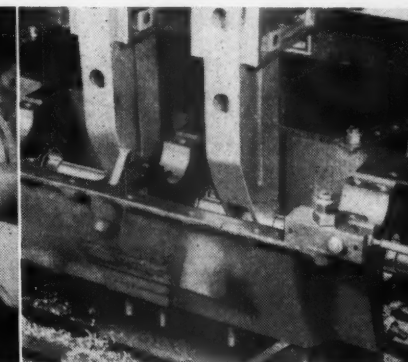


Pistons and rods are checked on an alignment gauge.

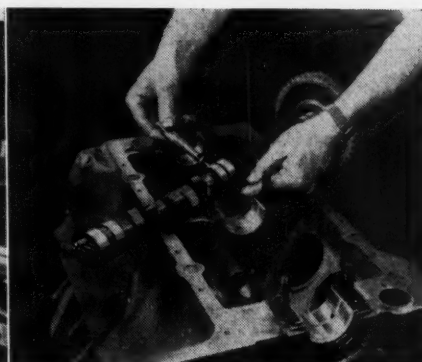
Grinding crankshaft bearings to insure a perfectly round and smooth bearing surface.



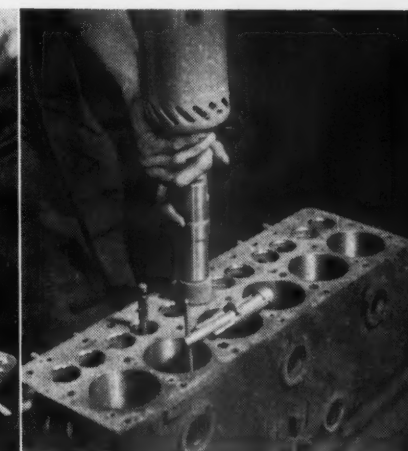
On camshafts that are suitable for use, bearing surfaces are refinished.



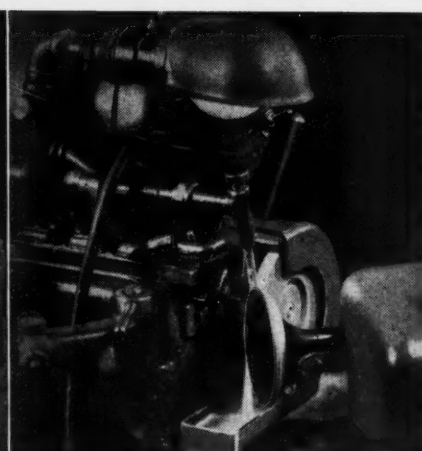
Measuring camshaft bearing surfaces before installing new bushings in the crankcase.



Valve guides is another item which is always replaced in the block.



Refacing valve seats to assure proper alignment with the valve guides.

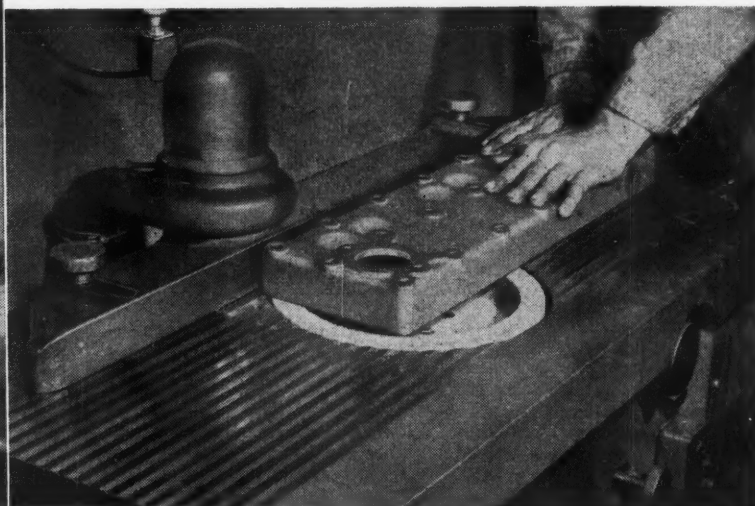


Regrinding new valves, when necessary, to assure proper concentricity.

Approved Engine Rebuilding . . . Continued from page 49



Installing new timing chain and sprockets or gears.



Planing the head in cases where warpage has taken place.

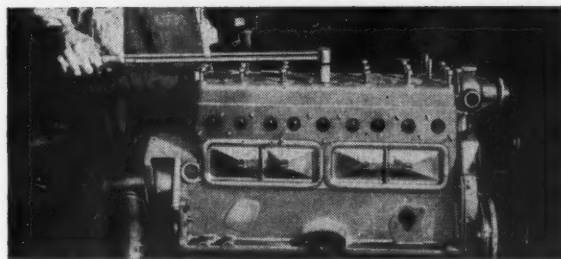
and sleeved. A large stationary boring bar is used, assuring accuracy to within .0005 in. of the correct size.

The cylinders are then honed. Honing insures prolonged life and proper seating of the rings. Every block is chalk-marked with a number for the reference of the inspector, so that he can check the final results after honing against the oversize dimensions indicated on the block.

The block is sent back to the cleaning vat for a final cleaning. All filings and metal particles are removed. New freeze plugs and water distribution tube are installed and the block is ready for assembly.

While the block has been undergoing its reconditioning, new pistons have been set aside for this particular unit. New connecting rods are used, and the pins are fitted. The piston is assembled to the connecting rod and checked on a rod aligner to insure correct alignment with the crankshaft and cylinder bore.

As with all other parts, piston rings are purchased from the original equipment factories. In order to obtain a perfect fit, the rings are inserted in the bore until the gap is checked. Too small a gap in a ring may cause butting of the ends when heat expansion takes place, causing



Installing the head, using a torque wrench for the correct tension on head bolts or nuts.

excessive wear and possible seizure of the engine. Great care is taken to see that each ring is in its correct groove and that the gaps are evenly staggered to minimize compression loss. The piston is now ready for installation, but is put aside until its other components have been assembled.

In another department the crankshaft has been measured with micrometers, checked for alignment, and all bearing surfaces ground round and smooth. Crankshafts are always ground to the nearest standard size so that replacement bearings will be easily available at a later date. For

(Continued on page 82)



CH R I S T M A S
comes but once
a year. And to

the enterprising garage operative it should prove amply laden with good merchandising cheer. Here are a number of holiday sales slants with a distinct Yuletide flavoring which are being used successfully this year.

One repair shop began early in September by inviting anyone and everyone in the community to join the "Xmas Club." Club members pay in varying amounts ranging from \$1 to \$10 weekly, monthly, or at fortnightly intervals. They receive receipts for each and every such payment. Then on or about December 15 club members receive vouchers representing all the money they paid in. There is no "bonus" amount added to the voucher. But, club members do receive several very distinct benefits. Real bargains in merchandise are offered to club members only between December 15th through 20th. Club members receive "first crack" at this automotive accessories and used automobile crop. Secondly, all accessories are gift wrapped and delivered or mailed to the receivers. The shop even supplies suitable cards to go with each gift purchased.

Another repair shop has a slightly different Christmas promotion. It believes that the day is very much for the kiddies. It presents Santa Claus every afternoon between 3 and 5 p.m. from December 14th through the 24th. Parents who dislike bucking crowded



department store lines bring the small fry in for a glimpse of a real live Santa. While they're there, there's no reason for them to overlook a special display of automotive merchandise.

This same garage has a special "Small Fry Bar" with gifts in the \$0.50 to \$5 price range. Boys and girls who want to give Mother and Father a gift for the family automobile may patronize this "bar." Here are headlights, tail-lights, cushions, "gadgets" for the family automobile—and like items. Gift wrapping and cards are provided by the shop.

Another shop offers Christmas gift certificates.



Christmas Comes to the Repair Shop Owner

By using unusual merchandising schemes,
a number of repair shops have been able to
secure their share of the seasonal profits

by R. C. Travers

They are printed on handsome holly-bedecked paper in amounts from \$5 to \$500 and upwards, if desired. These certificates make good holiday presents for motorists to present to friends. They may be used like cash at any time during 1950 for either automotive service, accessories or as down payment towards a new or used car. Any tax due on purchases made by bond holders must be paid for in cash, but the bond does cover the retail cost of items or auto repair service.

A fourth shop offers each and every day between December 1st and 24th, a Santa Claus Special. Each day one item—an accessory or used automobile—is offered, FOR THAT DAY ONLY, at a special pricing. If unsold at the close of the business day the item or car in question returns to regular pricing. These daily "Santa Claus specials" are NOT advertised via the radio, news-

(Continued on page 90)

Don't Give Your Business

BAD debts were unusually low during the war-sales years but they have been increasing for more than a year. The honeymoon on credits and collections is over.

Few repairmen and dealers are taking adequate means to collect their outstanding open accounts and our field experience shows that these are increasing. In one case we reviewed, past due accounts jumped 50 per cent in the past six months. Most businessmen fail to realize how fast the profit in a charge account is eaten up by lax collection practices. We know more than one repairman who has had to borrow money to pay his bills because his own credit customers did not pay him. Even if you do not have to borrow because your receivables are delinquent, you lose the use of the money during the period of delinquency. Quite a number of automotive merchants have told us that they have stopped discounting their bills because they can't get their money in on time. This cuts deeply into their profit on credit sales.

You can reasonably figure that money which costs you 5 per cent or more to borrow is worth this much to your business. If you have to lend it in goods, you should compute the interest on the outlay too. If a customer asked you to lend him \$100 it would be good business to ask interest on it and he could not consider it an imposition. Logically, he should pay interest on a \$100 charge sale, but trade practice takes precedent and businessmen lend their goods without interest. Yet, when you tie up substantial funds in receivables, you are freezing your capital and endangering your financial position as much as if you lent your money without interest.

Let's consider a typical case that we have just reviewed. The repairman has a well-paying garage where he sells repair service, accessories,

Don't let small time "friends" jeopardize your whole business by saddling you with a batch of accounts which you will eventually have to write off against your own profits

by Arthur Roberts

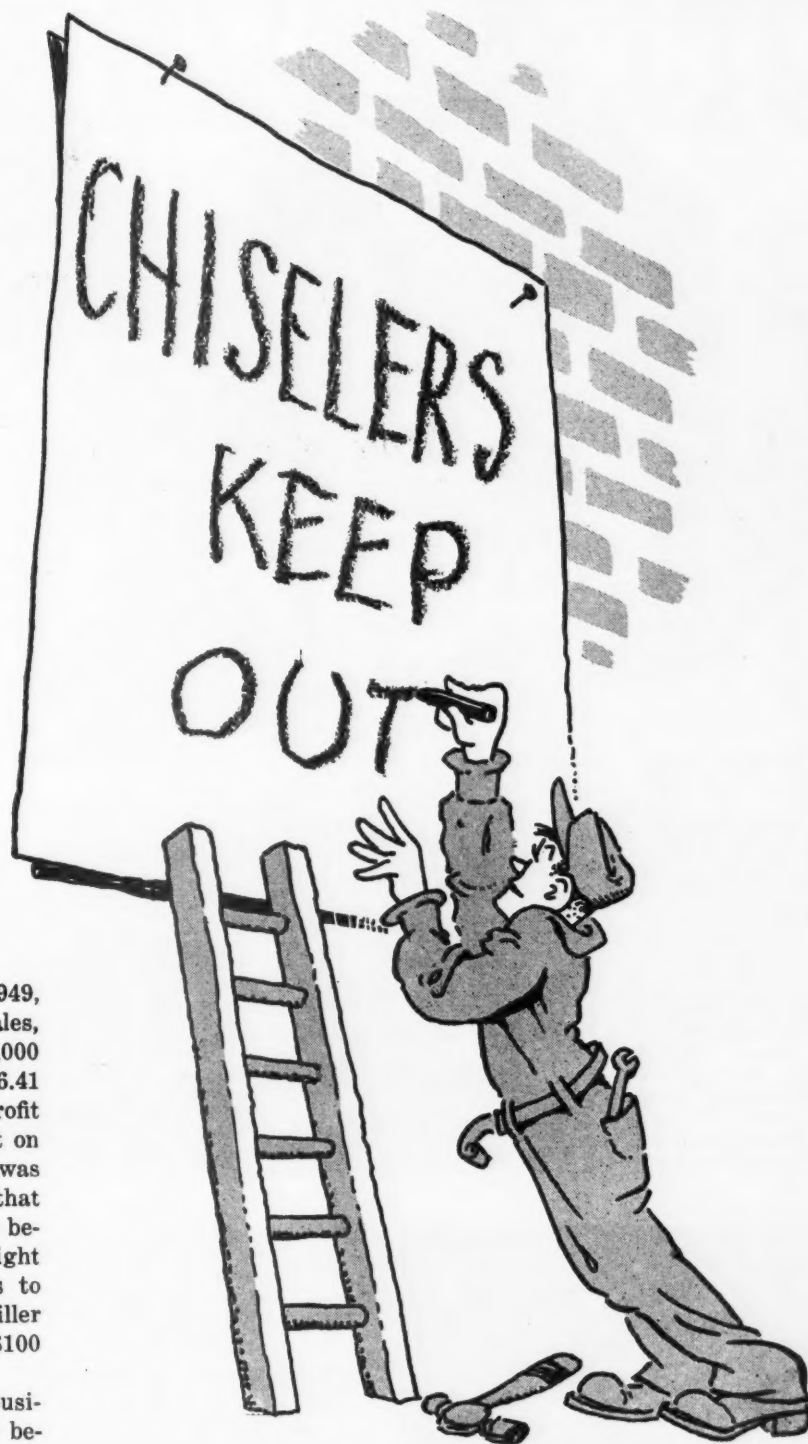
gas, oil and some minor services. His terms are 30 days, he had \$2,000 past due in receivables up to August 31, 1949. They classified as follows:

Past due			
30 days	60 days	90 days	Total
\$800	\$500	\$700	\$2,000

At 5 per cent interest, the 30-day accounts (\$800) cost him \$3.50 for August, the 60-day accounts (\$500) cost him \$4.16 for July and August, the 90-day accounts (\$700) cost him \$8.75 interest for June, July and August. This makes \$16.41 interest all told. His bookkeeping work and collection expense on these accounts approximated 1 per cent of their sales figure, or \$20. Because he could not get in his money on time he had to forego the discounting of more than \$2,000 of bills payable in June, July and August, and so, he lost \$40 on discounts. Up to August 31, 1949, his past due accounts had cost him:

Interest	\$16.41
Expense	20.00
Lost discounts	40.00
Total	\$76.41

Away!



His figures up to August, 1949, showed a net of 5 per cent on sales, so, he earned \$100 on these \$2,000 past-due accounts. Deducting \$76.41 from \$100 leaves \$23.59 net profit on this business or 1.2 per cent on \$2,000 sales, and the money was still outstanding, which meant that he would have to pay out more before he got it all in and he might end up with a few bad debts to boot. In the final analysis, Miller is likely to lose more than the \$100 he made on these credit sales.

Creditmen agree that many businessmen who fail do *not* fail because their accounts are uncollectible. They fail because they can't collect their money when they need it. After the crack-down, the receiver often collects all or most of the money due.

The reason automotive merchants cannot collect their bills on time is that they often give credit to customers who are good for the money but take their own time paying. It is sometimes

better to pass up such business. However, in most cases, the seller is at fault because he lets his customers pay as they please. The first step in effective collection practice is to make sure that your customers understand when the accounts are opened that your terms are such-and-

(Continued on page 96)



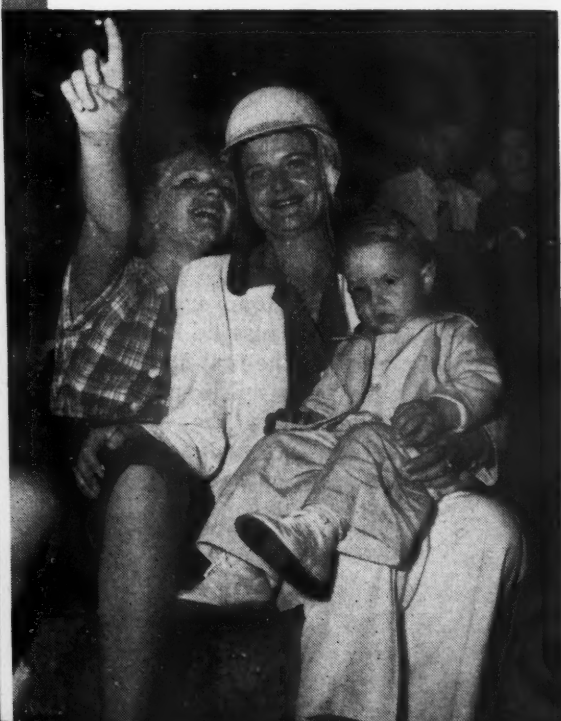
▲ Ruby the camel isn't camera-shy with Jackie Waldron sitting astride her. The exploitation campaign dramatizes the Prest-O-Lite Hi-Level battery.

► These cars, used by the President of the United States, cost about 70,000 dollars. The Lincoln is bullet-proof from every angle with an extra heavy rear window for emergencies.

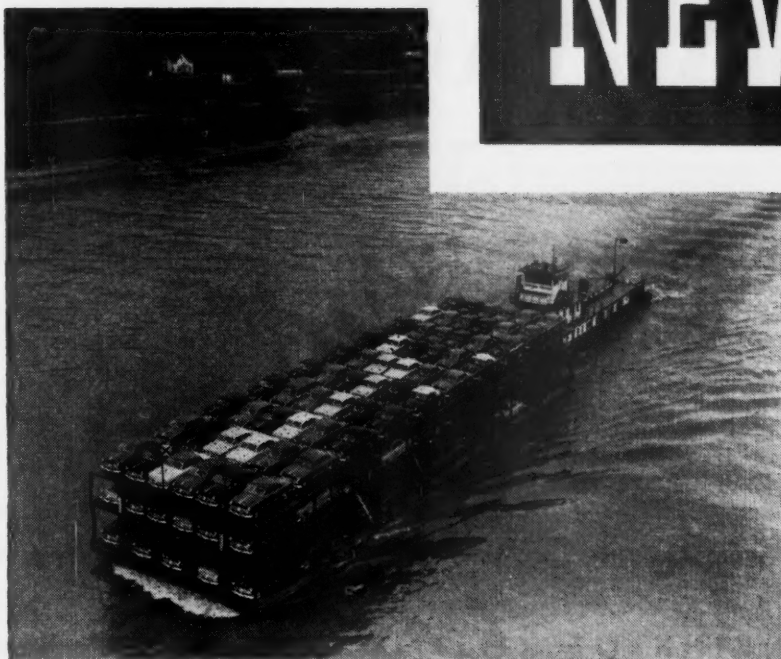


◀ For a little added excitement, Mrs. Sara Christian of Atlanta, Georgia, drives in stock car races. Main interest, however, is still in her two children.

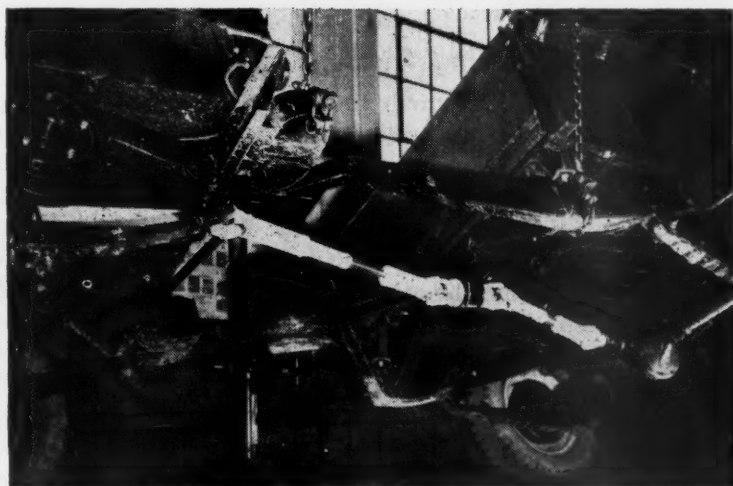
▼ Taxi drivers expect almost anything. Ralph Gardner, of Seabrook, Md., gets his daughter and her pony as passengers to Washington to appear on television.



NEWS SCENE



▲ Mississippi traffic, 1949 style. A three-decker barge loaded with 172 automobiles is pushed up the Mississippi River from Memphis to St. Louis. One of these three day trips is made each week.



▲ This underside view of the Willys-Overland power trailer shows the special drive shaft which links the trailer to the power take-off of the towing Jeep.



▲ Jacque Mercer, 1950 Miss America, is presented with a 1950 Nash from Clay Doss, Nash's vice-president in charge of sales.

► Serving as a grim warning to motorists at a busy intersection in Oakland, California, this old horse-drawn hearse occupies a prominent spot on the side of the street. It is as effective as it is cheerless.



SHOP KINKS

\$25

FOR THE BEST KINK
PUBLISHED EACH MONTH

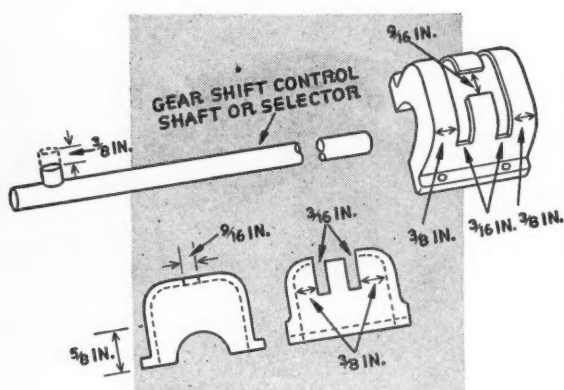
\$5

FOR ALL KINKS
PUBLISHED EACH MONTH



Have you figured out a short cut for doing a job, devised a special tool to make a job easier, or developed any other helpful idea? Your Shop Kink may be worth five, possibly 25 bucks. Write it or draw it—just make it plain, not fancy—and send it to Motor Age. Of course, we don't accept anything previously published.

BEST KINK OF THE MONTH



Repairing Studebaker Transmissions

Here's a remedy for 1939-40 Studebaker Champions when gear shift parts are worn, allowing the transmission to get into two gears at once.

Remove the pot metal cover, measure $\frac{3}{8}$ inch over from the inside of the face casting, and saw a $\frac{3}{16}$ inch slot about half way through. Do the same from the other face. Drill and file out a $\frac{9}{16}$ inch slot for the selector rod to slide through. Braze a piece of steel $\frac{3}{8}$ inch long on the end of the rod. Reassemble. If threads in the pot metal casting are stripped, get a 10-24 machine screw long enough to go through both pieces. File one side of a square nut to fit the curve of the casting and pull it down flat. *Glen Orr, Okmulgee, Okla.*

Removal of Hudson Rear Motor Support Made Easier

In removing the rear motor support on '48 and '49 Hudsons, the usual procedure is to remove the transmission which requires four hours on standard cars and more on those with overdrive and Drive-master. The time saver I find is to raise front end of car. Remove motor support backs from the frame, place jack under the transmission, jack up transmission against floor boards using a $\frac{3}{8}$ drive socket (that

has been cut exactly in half) with a 6 in. $\frac{3}{8}$ pull handle. Remove the cap screw from the center of the transmission that holds motor support. Replace in reverse procedure. *Elsie Freeman, McLaurin Auto Sales, Jackson, Miss.*

Modifying Grease Fittings For Positive Lubrication

I have run into an awful lot of excessive wear on steering idler arms and bushings on various cars due

to careless installation of the zerk fitting in the end of the bushing. Sometimes the zerk screws so far into the bushing that the opening is sealed off by pressing against the end of the shaft, preventing the grease from entering the bushing. On these jobs, to prevent a comeback, I always notch the threaded end of the zerk to a depth of $\frac{1}{16}$ in. with a three cornered file or on the edge of an emery wheel. This will leave an opening for the grease to enter the bushing. This also works on Ford spring center bolts,

equipped with zerks, on some makes of upper control bushings and some spring shackles. *W. Edward Smith, c/o Pr. Wm. Motors, Manassas, Va.*

Improving Ground On Late Model Starters

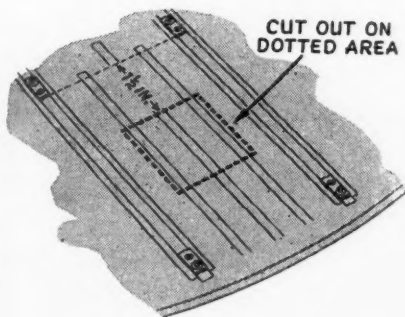
I have found that on the late models Delco Remy starters that are equipped with white metal commutator and housings, the ground brush holders have a tendency to fuse due to improper ground. By joining the ground pigtail to the starter housing the results prove excellent and also add longer life to the starter. *John J. Marisi, 4312 8th Avenue, Brooklyn 20, New York.*

Rod Driven Into Old Stud Eases Nut Removal

I have found a good way to remove water pumps on old models of Dodges and Plymouths which use a stud bolt. I drill a 11/64 hole through the nut and stud. Use a piece of 11/64 in. rod about 1/4 in. long. Drive it into the hole. Then the bolt will screw out of the block easily. *Joe Benjamin, Concordia, Kan.*

Replacing Gas Tank Gage Units on Chevrolets

When replacing gas tank gage units on 1949 Chevrolet cars, lift the deck lid and the rubber mat to

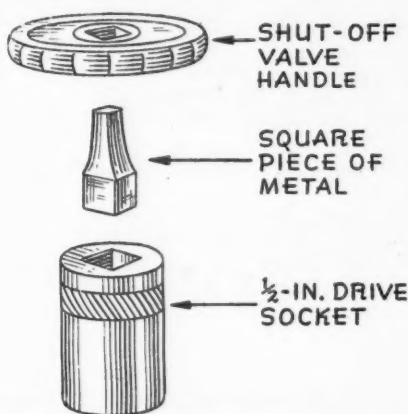


get to the front tank strap attaching bolts. Then measure as shown in the drawing and drill four 3/16 inch holes, one in each corner. Chisel out a square 3 1/2 by 3 1/2 inches. Make a new sheet iron plate 4 inches by 4 inches and drill

a hole in each corner. Place the plate over the hole in the pan and secure it with metal screws. This same kink can be used on most cars by varying the measurements. *E. Heath, 518 Wilder St., Frallon, Nev.*

Handy Wrench Is Made From Water Valve Handle

A palm wrench that can be used on small nuts and in places where an ordinary socket wrench is unsatisfactory can easily be made



from an old water valve handle and a piece of square metal. One end of this piece is shaped to fit the handle and soldered or brazed to it while the other end fits the interchangeable sockets. This wrench will quickly turn up the nuts in hard to get at places and the regular handle can be used for the final tightening. *Marion L. Rhoades, Knightstown, Ind.*

Breaking Into a Locked Chevrolet Pickup Truck

I've had this happen to me several times lately. A customer gets out of his 1949 Chevrolet Pickup Truck, leaves the keys in the ignition and the glasses rolled up. When he returns he is locked out.

This is the fastest and easiest way to get in. Raise hood, remove the three screws from the round piece of metal on the firewall on the right side firewall. Then push the floor mat in and out of the way. You can then reach in through this round hole and by stretching a little you can crank the right hand door glass down. *Leon M. Adams, Box 14, Wilmot, Ark.*

Removing Studebaker Water Pump Shaft

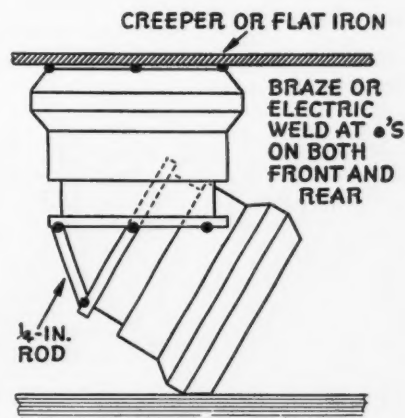
To push out the shaft on a Studebaker water pump, the shaft pushes from the inside out so the round part has to be pushed on the press. This takes a lot of blocking to hold it straight. Just take two old connecting rods and remove the caps which are not used and the bolts from one rod. Then slip the rods around the bottom of the water pump and the shaft can be pushed out easily without blocks. *Albert Baldwin, 56 Spencer Avenue, Owego, N. Y.*

Hacksaw Blade Used to Clean Sheepskin Bonnets

When sheepskin polishing heads get caked up with rubbing compound, try cleaning them by combing with a hacksaw blade. Then blow it off with an air jet. *Theo. Dieckhaus, Jr., 109 W. 5th Street, Washington, Mo.*

Making Creeper Wheels From Throw-Out Bearings

Here's a good way to repair creepers with worn wheels. Find eight discarded throwout bearings, all the same, and braze or electric weld them at the points indicated in the illustration. Then attach the upper part to the creeper, and it will



provide satisfactory results until the creeper is replaced with a new one. *Louis Govea, Hyde Park Garage, 513 W. 43rd Street, Austin, Tex.*

Movieland Collects ANTIQUE CARS

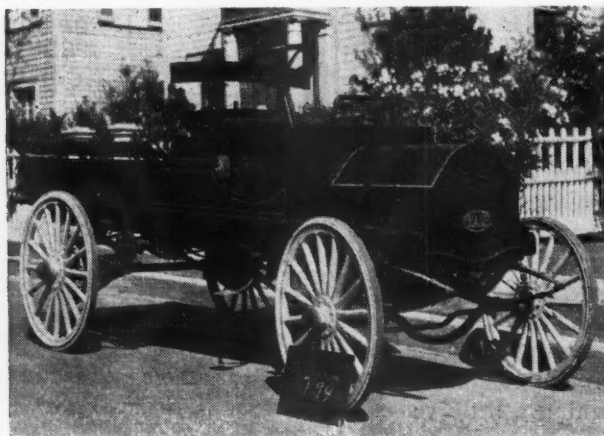
These old timers from the collection of the Twentieth
Century-Fox Studios frequently appear in star roles

by R. Raymond Kay



Above. This 1902 two-cylinder Columbus was purchased from an original owner especially for the picture "Captain Eddie".

Below. A 1913 Chase three-cylinder delivery truck, used in the picture, "The Late George Apley."

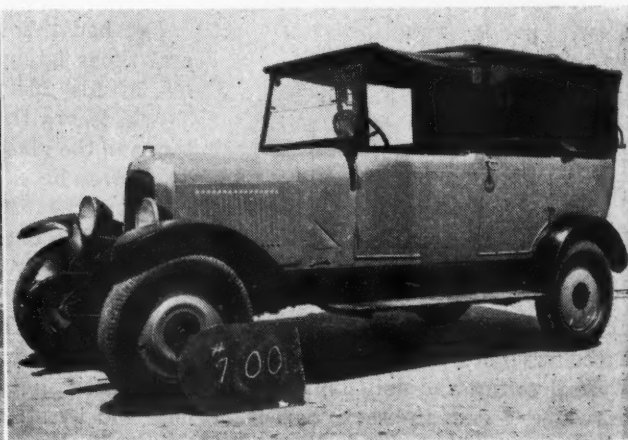


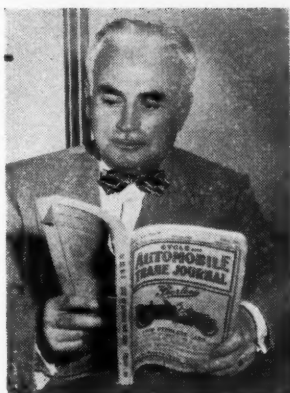
IN Hollywood, stars may come and stars may go—but old automobiles, glamorous or otherwise, keep rolling right along. The collection owned by Twentieth Century-Fox Studios consists of one hundred thirty-one cars, mostly American, ranging from 1896 through 1928 models. All are still in running condition.

James Ruman, head of the Twentieth Century-Fox transportation department, is responsible not only for this collection, but for the 651 motor vehicles used for business.

Twentieth's collection was acquired in various ways. Many of the cars were outright gifts to the studio from sentimental owners who wanted to see relics preserved. Others were bought outright. As the studio's

Below. Here's a French taxicab, a 1914 Citroen, which has been used in "The Razor's Edge", "The Fan", and others.





Above. Debra Paget, 20th Century-Fox starlet in "East Side Story", at the wheel of a 1903 Ford, one of the Studio's collection of old cars.

Left. James Ruman, who is responsible for the Studio's collection, finds back issues of Automobile Trade Journal invaluable for information.

collection got a little publicity, people began to write in about old cars they owned or knew of. If interested, Ruman would ask prices, and if the prices were right, the cars would be added to the collection.

It's difficult to put a value on an antique automobile, Ruman points out. An old car for which you wouldn't pay \$25, if you wanted a car to drive, might be worth thousands to some wealthy collector. The studio has to find a low budget compromise, because of the expense involved in putting it in running order

(Continued on page 106)

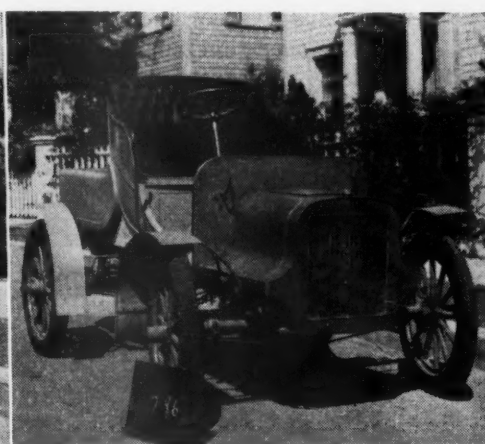
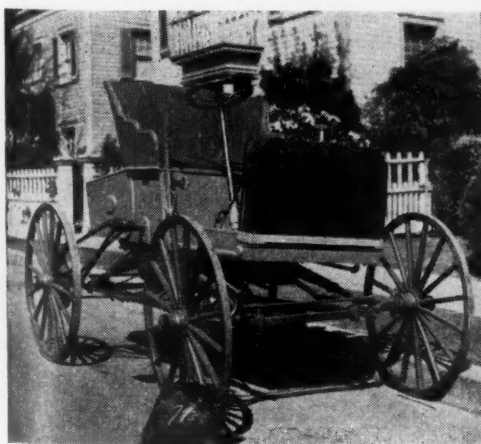


Above. The 1908 Maxwell shown here was built up from "a skeleton" by the Studio's repairmen.

Below: "Mother Wore Tights" when she rode in this 1896 Schacht during that picture.

Below. The one-cylinder Cadillac shown here is kept on hand for movies of about 1905 vintage.

Below. This rear-engined 1904 Stevens Duryea has rolled across sets at speeds up to 20 mph.

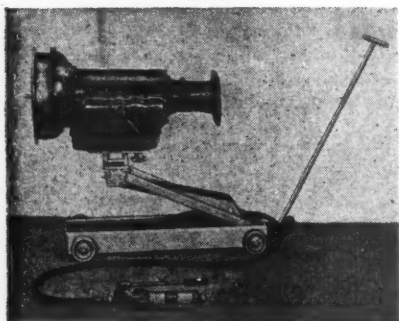


NEW

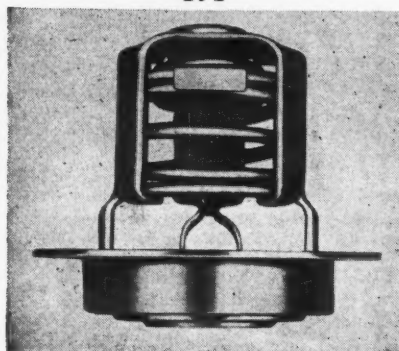
PRODUCTS

SHOW WINDOW

473



474



475



473—Transmission Hoist

Two new hydraulic hoists have been developed by Kent-Moore Organization, Inc., Detroit, Mich. Designed to facilitate removal and replacement of automatic transmissions by a single mechanic, the unit employs a special platform mechanism which permits lateral adjustments as well as tilting forward, backward, and sideways. Special interchangeable adapters are used which have been designed for handling the various automatic transmissions.

474—Engine Thermostat

A new thermostat is announced by the Dole Valve Company, Chicago, Ill., which is designed to hold its valve at the proper degree of opening against the most powerful water pump at any car speed, regardless of outside temperature. It will thus maintain the most efficient engine operation temperature at all times. This thermostat, called "DV-1," consists of a brass butterfly valve assembly, operated by a thermostatic piston unit.

475—Carburetor Fixture

A tear-down and build-up fixture to speed up repair work on Ford V-8 type carburetor is offered by Keller Research Corp., Detroit, Mich. This fixture is made of cast aluminum and may be held in a vise or screwed to a work bench. Because the carburetor is held rigidly in the most convenient positions for all assembly

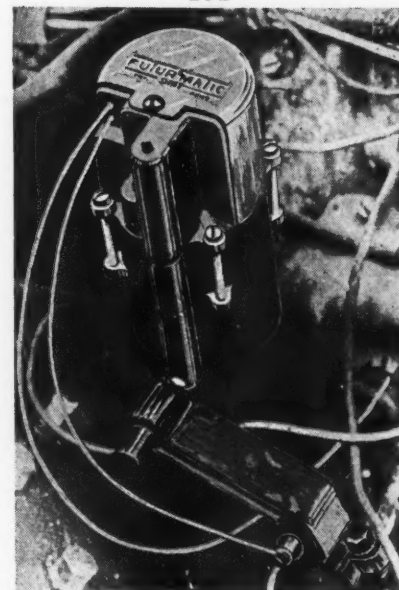
476



477



478



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For further information on any of the products mentioned in Motor Age write the code number of the product in the space provided below. Don't forget your name and address.

**Frank P. Tighe, EDITOR
MOTOR AGE
Chestnut & 56th Sts., Philadelphia 39, Pa.**

Code number of New Products

Your Name **Your Title**

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Address
(STREET & NO.) (CITY) (ZONE) (STATE)

and disassembly operations, the mechanic has full use of both hands to manipulate tools, screws and parts.

476—Power Hack Saw

A new power hack saw, operated by any standard electric drill, has been designed by the Zina Goodell Corporation, Salem, Mass. Weighing 21 lb, the attachment uses a standard 10 in. hack saw blade with a 5 in. stroke. It makes 200 strokes per minute at 1240 rpm.

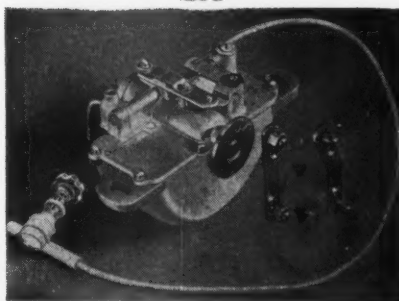
477—Body Sealer

Minnesota Mining and Manufacturing Company, St. Paul, Minn., is marketing a new autobody sealer that is designed not to harden, shrink, and is said to be completely water-proof. The sealer is a putty type material packaged in a solid bar 2½ in. in diameter and 10 in. long. The bar is wrapped in an oil-resistant paper and packaged inside a foil-lined sleeve. Trade-named "3M" Body Caulking, the new sealer is designed for use on seams between the roof and side panels and between the floor and side panels, to seal out water and dust.

478—Ford Shift Unit

A semi-automatic gear shift for 1940-49 Fords and 1940-48 Mercurys has been placed on the market by Future Products Company, Portland, Ore. Called the Futur-Matic Shift, this unit which is controlled by clutch pressure, shifts gears

479



from second to high, or high to second as needed, untouched by the hand. The manufacturer states that with the Futur-Matic the driver shifts finally to second gear only once per trip, thereafter, all forward shifting is done by this unit.

479—Wiper Motor

Trico Products Corporation, Buffalo, N. Y., has introduced a new Universal - Interchangeable windshield wiper motor designed to fit more than 500 different vehicle models dating back to 1932. Simplicity of installation has been achieved by the design of the interchangeable shaft attachments and adjustability of motor shut-off controls.

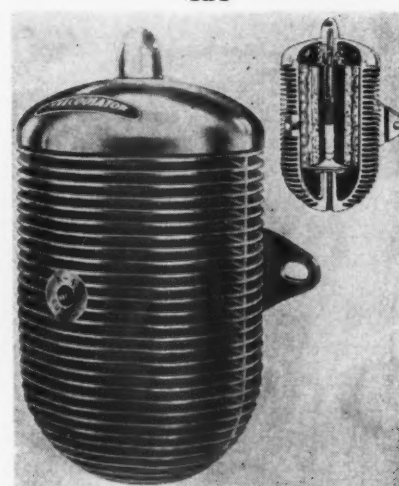
480



480—Gasket Cutter

Zimmerman Packing Company, Cincinnati, Ohio is marketing a gasket cutter which is designed to simplify the making of gaskets on the job. The manufacturer states that this tool cuts to rigid specifications any pliable sheet material in round, oval, square or irregular shapes.

481



481—Filter and Cooler

The Filcoolator Manufacturing Company of Los Angeles, Cal., has developed an engine oil heat exchanger and filter which is designed to reduce internal operating temperature as much as 20 per cent and fluid temperature as much as 15 per cent. The Filcoolator is said to de-

(Continued on page 62)

New Products Continued from Page 61

(For further information use coupon on p. 61)

crease the difference in temperature between the cooling system and the crankcase oil, thus narrowing the difference in expansion between water cooled and oil bathed parts such as piston skirts and cylinder walls. Made of aluminum alloy, the Filcoolator absorbs under-the-hood temperatures thereby warming up the oil which flows through it and decreasing the warm-up period by approximately 50 per cent.

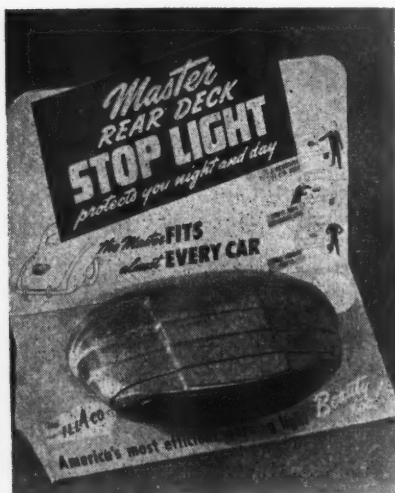
482—Safety Jack

The Triangle Jack Co., Wichita, Kansas, announces its Triangle Safety Jack, a new development in auto jacks. This new jack, according to the manufacturer, does the "impossible" jobs of jacking up a car on a steep hill without using wheel blocks, or in mud, ruts or on ice.

An inverted triangle of two steel rods and a chain, resting on a flat base distributes the car's weight at two points, reportedly making it impossible for the car to slip or slide off the jack. The Triangle Safety Jack slides under 2" axle clearance. It folds to 30 x 4 x 3 inches and is one piece.

483—Rear Deck Light

The Illinois Accessories Company, Chicago, Ill., announces a master rear deck stoplight. This

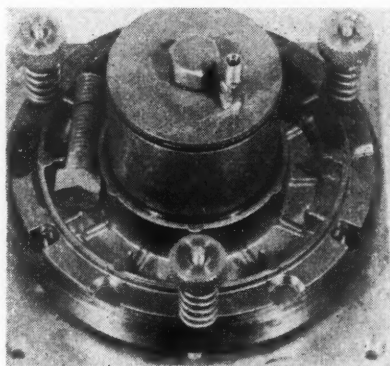


triple plated chrome warning light has a 21 CP bulb. It fits most cars and is said to be easily installed.

484—Hydra Matie Tester

The J. A. Richards Co., Kalamazoo, Mich., is marketing a fixture to test both front and rear angular piston units of hydramatic transmissions.

The illustration shows the gear unit in the fixture, which necessitates the wide steel collar. The springs have a proper tension capacity for oil testing the units. Neoprene rubber seals are furnished so that the oil does not deteriorate the seals.



The operator places the unit in the fixture, puts some oil in the bottom of it, puts on the seals and the cap and bolts it down; then puts on the spring units with the knurled nuts and tightens them down. Air is then applied through the valve stem to test the unit for oil leaks. If it is found to be okay the operator removes the unit from the test fixture without disassembly, puts it in the transmission, and proceeds to test the second unit in like manner.

485—Ratchet Wrenches

The Blackhawk Manufacturing Co., Milwaukee, Wis., is featuring a new line of ratchet wrenches. The wrench head now offers greater compactness, plus a design that prevents accidental reversing.

This latter feature was accomplished by recessing the reverse button so that when a mechanic grasps the wrench on top of the ratchet head he cannot accidentally reverse it.

The new streamline styling is claimed to have resulted in greater

strength in the ratchet head housing, greater efficiency and smoother operation and also an enclosed construction that eliminates a great per cent of dirt and grease.

The ratchet mechanism is now held in place in the wrench head by a snap on spring clip which can be removed in case the internal parts are to be cleaned and oiled.

According to Blackhawk, the ball head design is currently appearing on their 1/2 in. and 7/16 in. wrench drives and will eventually be standard on all drives in the line.

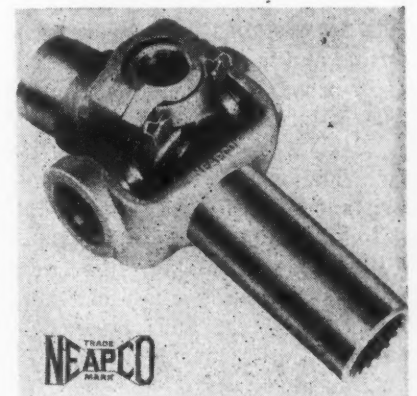
486—Ten-inch Grinder

The Baldor Electric Company, St. Louis, Mo., announces development of an improved 10 in. grinder. The particular feature of this grinder is large clearance between wheels and motor frame; other features include sealed-for-life type ball bearings, exhaust type guards, spark breakers and tool rests which are tiltable for angle grinding. Grinder is available in single phase 3/4 hp. or three phase 1 hp.

487—Truck Universal

Neapco Products, Pottstown, Pa., announces two additional universal joints for replacement in Chevrolet passenger and 1/2 ton commercial vehicles.

The No. 9060 is interchangeable with the familiar split ring design



replacement for Chevrolet No. 606779. It fits all Chevrolet passenger cars from 1940 to date.

The No. 9061 is a replacement for Chevrolet No. 591642. It fits 1949 passenger cars and 1/2 ton commercial vehicles.

(Continued on page 112)

FLOOR PLANS

FOR BETTER SERVICE



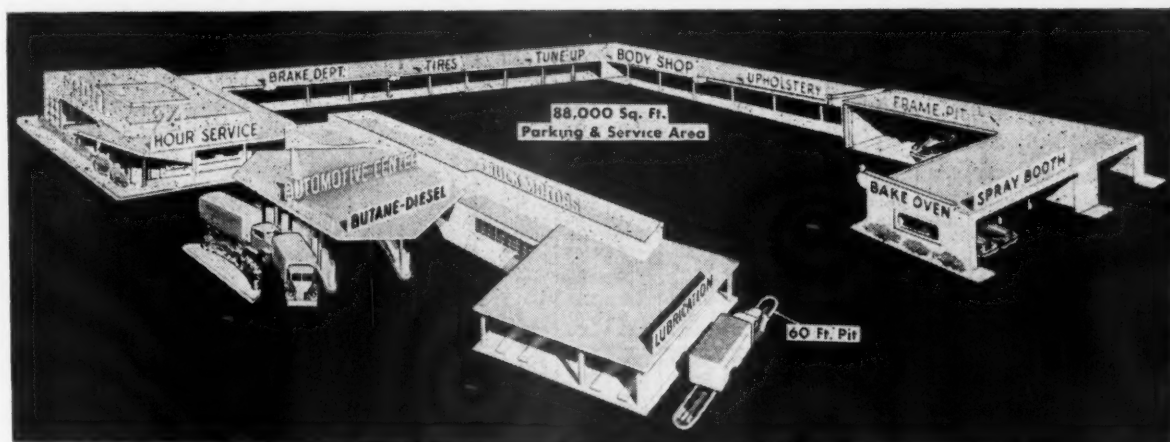
The Snyder-Lynch Automotive Center

at Burbank, California

THE \$500,000 automotive center recently opened by Ford Dealer Snyder-Lynch in Burbank, California, features a huge courtyard where 1500 incoming and outgoing cars monthly move through a control gate. A staff of 125 handles the \$80,000 business. The 24-hour personnel in addition to non-productive and hourly mechanics, includes ten clerks, two cashiers, three dispatchers for control booth, service manager, body and shop manager, motor rebuilding room manager, gasoline service manager, ten men on the pump islands, two washers, service department maintenance man, and two porters who divide their time between office and service de-

partment. Also there are five salesmen who sell Ford cars and trucks.

Equipment includes 16 overhead lubrication units in the service station, 14 gasoline and diesel pumps; 7 tube air-suction system transmitting cash from pump island to cashier's cage inside; a sixty-foot lube rack for trucks; another lube rack with three two-post hoists; air-operated tire-changing equipment; a motor rebuilding department with an engine-testing dynamometer; dustproof paint spray shop and bake oven; and a large showroom. The plant was conceived by George Nettleton, Jr., designer of automotive centers for service and sales.



New Car Registrations by Makes by States*

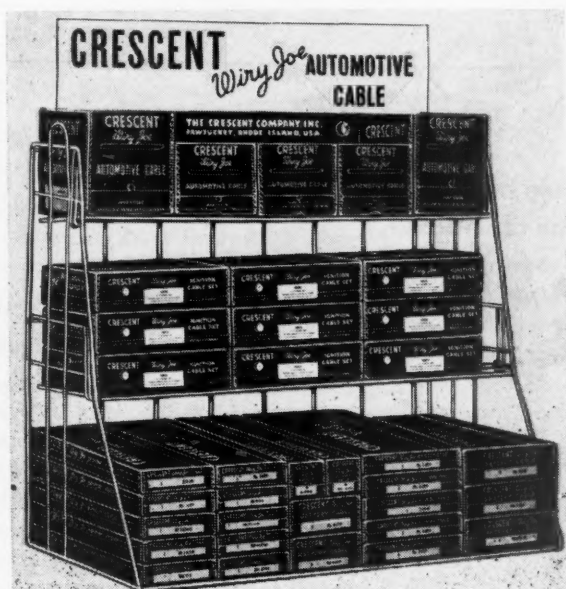
STATE AND MONTH	Buick	Cadillac	Chevrolet	Chrysler	Crosley	De Soto	Dodge	Ford	Frazer	Hudson	Kaiser	Lincoln	Mercury	Nash	Oldsmobile	Packard	Plymouth	Pontiac	Studebaker	Willys	All Others	Total
Alabama.....Sept.	207	84	983	94	8	48	259	666	1	41	21	26	164	64	173	54	362	209	174	19	4	3,631
9 Mos.	2328	494	10171	855	98	563	1807	7878	148	993	441	394	1816	985	1897	582	4342	2155	1536	232	39	39,554
Arizona.....Sept.	143	32	607	32	5	29	116	292	3	37	8	5	56	62	26	153	93	133	15	1	1,802	
9 Mos.	1044	296	2946	324	66	294	672	3016	44	689	121	118	574	558	670	258	1345	921	1088	119	29	15,172
Arkansas.....Sept.	177	53	786	58	6	40	195	618	9	46	26	14	89	62	137	47	399	189	122	30	10	3,072
9 Mos.	1639	203	6166	589	41	383	1231	5022	195	910	587	160	787	895	1122	485	2976	1456	962	308	117	26,164
California.....Sept.	3233	828	8504	1002	79	1104	2135	6231	79	940	231	291	1480	780	2415	545	3824	2983	2706	185	172	39,737
9 Mos.	21957	6139	59029	7781	643	7967	13966	45014	622	8822	2104	2351	10886	7320	16519	4692	26998	21699	18471	1305	1103	285,378
Colorado.....Sept.	329	75	830	145	8	65	275	619	7	256	21	44	160	183	240	84	518	233	152	49	6	4,290
9 Mos.	2491	503	5985	1093	74	531	1579	4895	108	2405	293	330	1390	1062	1439	735	3251	1730	1805	185	28	31,097
Connecticut.....Sept.	622	141	1227	186	12	135	380	879	4	103	41	31	205	112	401	131	682	493	308	50	21	6,144
9 Mos.	4987	1284	9846	1368	114	1100	2940	5973	76	1348	488	402	1562	1489	3317	1146	5084	3933	2198	335	200	48,700
Delaware.....Sept.	116	22	371	28	1	26	101	286	1	17	11	13	65	34	82	16	166	111	105	8	4	1,584
9 Mos.	814	180	2168	205	30	171	674	1918	34	223	136	107	397	225	735	172	1063	686	692	54	20	10,704
Dist. of Col.....Sept.	210	80	503	51	2	46	137	321	.....	40	19	41	118	32	156	60	324	158	116	3	11	2,306
9 Mos.	1644	531	4667	629	42	438	1491	3168	47	772	144	227	833	558	1825	583	2837	1578	845	75	93	23,027
Florida.....Sept.	404	152	1666	217	49	129	469	1139	5	129	51	71	323	122	402	134	778	348	278	96	17	7,106
9 Mos.	4083	1369	11126	1543	349	1029	2964	10443	227	2026	727	1028	3173	1439	2748	1401	8226	2972	2156	735	183	57,946
Georgia.....Sept.	614	103	2114	136	14	106	498	1419	9	109	35	15	322	92	396	112	779	446	306	40	4	7,708
9 Mos.	4447	902	13929	1302	146	960	2990	12065	279	1694	754	718	2952	1214	2794	1052	811	4025	2183	394	78	60,079
Idaho.....Sept.	191	43	679	65	2	58	134	360	10	79	24	21	103	110	131	49	216	188	159	21	7	2,660
9 Mos.	1242	213	2822	404	11	311	715	2224	141	711	294	178	600	687	764	299	1377	924	1067	164	56	15,394
Illinois.....Sept.	2797	436	7044	856	29	811	1931	4482	82	922	366	213	1267	779	1542	686	3790	2016	1132	136	33	31,150
9 Mos.	21201	5011	49689	6860	577	5863	14384	38148	1460	9868	3950	2251	9221	7923	13301	6339	28720	15340	8721	1233	529	250,424
Indiana.....Sept.	1238	183	4202	371	26	302	913	2539	28	463	220	111	482	500	761	328	1724	1052	672	77	12	16,404
9 Mos.	7738	1502	23468	2488	325	1877	5187	15851	513	4165	1817	718	3049	3414	5461	2288	10875	6428	6301	604	156	104,338
Iowa.....Sept.	678	103	2331	245	12	169	737	1765	13	231	139	51	412	175	482	156	1057	520	494	47	3	9,801
9 Mos.	5168	752	17138	1967	174	1082	3891	14908	473	2389	1822	412	1997	2180	355	1461	7867	4004	2587	275	247	74,814
Kansas.....Sept.	560	118	1751	213	12	88	624	1225	10	169	77	82	321	197	355	158	691	405	289	42	8	7,202
9 Mos.	4015	645	12694	1871	241	844	2721	9641	318	2154	917	524	2328	1811	2664	1270	5453	3251	1924	141	124	56,211
Kentucky.....Sept.	445	67	1531	170	9	77	398	1139	7	109	34	33	172	110	294	104	646	324	312	66	.....	6,539
9 Mos.	3284	519	11117	1177	111	669	2279	8548	167	1299	528	312	1379	1104	2320	911	5131	2544	1615	435	132	48,591
Louisiana.....Sept.	484	98	1639	144	11	84	450	1294	6	128	72	55	291	88	337	94	670	407	380	48	7	6,782
9 Mos.	3374	681	11146	978	148	631	2243	9534	204	1673	925	443	2072	1041	2140	828	4644	2858	2041	393	65	48,400
Maine.....Sept.	246	44	739	55	4	66	188	406	11	63	50	22	100	69	175	66	329	268	79	33	7	2,976
9 Mos.	1376	298	3707	416	60	370	1091	2475	89	651	376	131	554	548	1130	374	1920	1398	617	190	47	17,810
Maryland.....Sept.	460	83	1800	181	2	123	389	1053	9	144	79	37	195	110	397	123	799	355	274	30	8	6,420
9 Mos.	3631	717	12530	1349	109	1110	2859	7905	155	1793	708	394	1535	1367	3157	1245	6169	2993	2052	330	98	52,106
Massachusetts.....Sept.	1194	199	2738	430	19	335	849	1851	12	220	115	93	469	281	999	248	1590	998	622	88	45	13,387
9 Mos.	9579	1866	18118	2803	275	2683	6422	14414	199	2403	1086	764	3680	3286	8344	2074	11728	7913	3885	573	335	102,390
Michigan.....Sept.	2422	389	7206	621	22	511	1478	5474	57	508	188	130	980	398	1486	454	2713	2125	947	60	23	28,282
9 Mos.	21687	4581	55376	5094	330	4706	11467	47045	894	5907	3009	1338	8407	5491	15004	4207	22640	19188	5585	742	380	245,336
Minnesota.....Sept.	742	106	2409	344	8	180	630	1746	21	308	187	69	414	180	955	260	1181	630	592	25	8	10,515
9 Mos.	5397	941	17512	2506	127	1392	4025	13135	426	3157	1646	510	2747	2703	3955	1868	9290	4756	3352	324	78	79,448
Mississippi.....Sept.	257	52	735	81	3	24	199	567	3	37	17	18	116	66	155	34	292	185	103	11	2	2,967
9 Mos.	2189	367	6876	736	96	364	1283	5704	104	788	350	281	1133	789	1203	438	3246	1783	998	223	72	29,043
Missouri.....Sept.	798	123	3226	290	9	167	608	1920	18	217	117	70	416	391	508	220	1313	586	283	68	4	11,324
9 Mos.	5165	1257	23797	2203	214	1699	4163	16384	302	2530	1221	622	3320	3001	4414	1844	10370	5172	2693	542	184	92,127
Montana.....Sept.	140	37	564	49	3	34	136	286	2	70	22	14	86	44	116	51	155	137	105	21	.....	2,072
9 Mos.	1154	278	3836	495	22	319	946	2670	122	824	278	182	697	647	912	422	1606	1042	911	148	24	17,586
Nebraska.....Sept.	358	69	1064	125	1	47	282	789	7	64	40	32	165	47	184	78	541	272	230	26	3	4,404
9 Mos.	2892	471	8252	1236	51	444	1705	7714	196	876	583	263	1396	755	1522	694	4531	2382	1388	169	74	37,573
Nevada.....Sept.	52	30	153	23	1	16	21	72	.....	13	4	8	43	15	39	15	71	47	23	3	1	648
9 Mos.	380	181	955	178	1	130	192	648	20	153	28	87	311	149	291	122	532	386	301	22	4	5,051
New Hampshire.....Sept.	132	26	402	36	.....	27	125	243	3	20	20	9	50	50	97	30	170	133	65	9	5	1,632
9 Mos.	906	154	2164	261	29	217	821	1644	28	307	149	62	336	372	618	245	1286	800	398	97	48	10,943
New Jersey.....Sept.	1491	244	3300	423	26	334	990	1797	13	324	148	93	457	271	940	323	1528	1540	442	121	26	14,831
9 Mos.	11446	2538	21278	3688	384	2646	7351	14015	262	3895	1164	897	3878	2876	7035	2872	11819	10637	4807	983	360	114,831
New Mexico.....Sept.	177	15	326	52	5	18	60	252	4	28	14	9	96	40	69	31	153	82	81	8	3	1,823
9 Mos.	1114	178	2450	369	60	172	579	2058	79	454	176	175	694	468	558	276	1157	668	550	83	18	12,327
New York.....Sept.	3674	768	7922	1110	42	1096	2829	4312	36	677	423	241	1165	710	2594	815	4050	3272	1644	230	102	37,712
9 Mos.	30413	8022	66301	9182	651	8693	21685	37973	979	8448	4548	2335	9789	9135	21873	8597	32352	26011	12106	2075	1312	312,866
North Carolina																						

MERCHANDISING METHODS

A review of manufacturers' plans designed to help you sell merchandise and make more profits

Crescent-Wiry Joe Will Feature Periodic Wiring Inspection

THE Crescent Company of Pawtucket, Rhode Island, manufacturers of Crescent-Wiry Joe automotive cables is beginning an advertising campaign to emphasize the importance of periodic rewiring of cars.



Passenger cars with old ignition wiring have shown as much as ten per cent improvement in performance on a dynamometer test when the old wiring was replaced by new. And under wet weather conditions the improvement could well be even more significant.

The idea of periodic inspection either on a time or a mileage basis, and replacement of automotive parts and accessories has for years been applied to various other components of the automobile with marked success.

Kem Gold Rush Campaign Jobber Salesman Contest

KEM MANUFACTURING CO., Fair Lawn, N. J., are conducting a "Gold Rush Campaign" and will give away cash prizes to jobber salesmen. The campaign closes January 24, 1950. Any KEM jobber salesman may enter the campaign and all campaign material for him can be procured by the jobbers' registra-

tion of eligible men on contest forms available at the factory. They will submit a story on the methods they use to successfully promote the sale of Kem products. A list of 12 suggested subjects may be secured from factory.

New Purolator Sales Film

"PAY DIRT," the new Purolator Products, Inc., sales training film, is now being released for use in the field, Carlos D. Kelly, Purolator vice-president, has announced.

The name of the new sound slide film is derived from the fact that dirty filter elements, properly checked when cars add or change oil, can be an important source of continuing profit to car dealers, independent repair shops and other outlets for automotive products.

Purolator field men will shortly have copies of the film for use locally, and distributors, jobbers and others interested in using the film in their own organizations or among their dealers may arrange to obtain copies by writing Film Department, Purolator Products, Inc., Newark 2, New Jersey.

Fram's 1950 Sales Drive Is "Complete Engine Protection"

IN 1950 the Fram Corporation, Providence, R. I., plans to market "Complete Engine Protection," available for most passenger cars now on the road.

Fram "Complete Engine Protection" is accomplished by placing a Fram Filter at every vital point where contaminants can enter or form. The air breathed in by the carburetor and crankcase is first filtered clean to remove abrasive dirt and dust. Gasoline is cleaned by removing water, scale and rust before it enters the carburetor. The lubricating qualities of oil are kept longer when corrosive contaminants manufactured inside the engine are filtered out. Finally, blow-by gases are removed by adequate crankcase ventilation.

All of these products are backed by Fram's unconditional guarantee. They will be further backed in 1950 by an advertising, merchandising and sales drive even more powerful than what has been successfully done in the past.

CLEARING HOUSE

FOR SERVICEMEN'S QUERIES



TROUBLE SHOOTING WITH JACK MONTGOMERY -- TECHNICAL EDITOR

When a job stumps you, write Readers' Clearing House. Besides receiving aid yourself, you may help someone else in the same situation. Among the letters sent in recently, these problems came up:

- Alinement of Buick drive shaft ● Installing transmission on Chevrolet truck
- Transmission grease leakage on Buick ● GMC runs rough with new block
- LaSalle has vapor lock ● Engine roar trouble in Lincoln ● Clicking in Studebaker transmission
- Cooling system trouble on new Ford engine
- Chevrolet noisy after overhaul ● Chevrolet idles rough.

How to Aline the Drive Shaft on a 1939 Buick

We have a 1939 Model 40 Buick, which has a short drive shaft on the rear end. How can I line it up? Can I put a '40 drive shaft in?—George Russell, 4801 White Plains Ave., Bronx, N. Y.

REGARDING alinement on the short drive shaft of a 1939 Buick, the torque ball adjustments should never be changed unless misalinement exists. In this case, assemble the rear axle and let the car rest on the floor. Loosen both adjusting studs and center the propeller shaft. Readjust the studs and lock them in position. A 1940 drive shaft is not interchangeable and cannot be used.

Installing a 4-Speed Transmission in Panel Truck

We would like to install a four speed Chevrolet syncro transmission in a 1947 Chevrolet Panel delivery. Would you kindly inform me as to what has to be done and necessary parts needed? W. R. Edmondson, Hallowell Chevrolet Co., 350 Clovis St., Clovis, Calif.

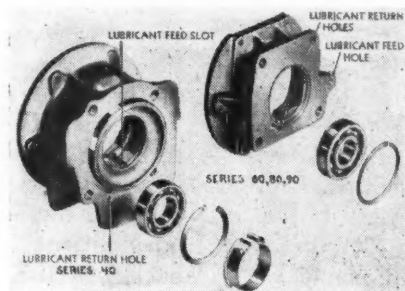
THIS can be done by obtaining a regular four-speed transmission along with a clutch cover and disc assembly. It will be necessary to install a shorter drive shaft.

Transmission Grease Leaks Into the Rear on Buick

We are having quite some trouble keeping grease in the transmission of a 1936 Buick, Model 40. The transmission on this automobile has recently been rebuilt with new bearings throughout. A new universal joint and universal joint bushing has also been installed. However, the grease still leaks out past the universal and into the rear end.

What do you think of the idea of putting a vent in the transmission to act as a pressure reliever? Paul K. Kuehnle, 1516 Leland Avenue, New York 60, N. Y.

I THINK your idea of putting a vent in the transmission is good. Also, install a shielded bearing on the rear end of the transmission mainshaft. This job calls for a



shielded bearing, but sometimes it is not used when making the replacement. There is the possibility that the universal joint is worn

where it fits into the torque tube. In this case, a new joint should be used.

Overhauled GMC Has New Block, Still Runs Rough

We have been having trouble with a GMC truck running rough. We installed new block assembly, new head, valves, valve springs, distributor, carburetor, fuel pump, fuel lines, vacuum lines, octane selector, and a new exhaust manifold. Tried three different sets of new plugs and it still misses at a little higher speed than idle. Cormier's Repair Shop, Jennings, La.

REGARDING the trouble you are having with a GMC truck engine, I would suggest checking the compression and vacuum. If these read okay, check the ignition timing, making certain it is set right on the marks. Also check the vacuum centrifugal advance mechanism in the distributor. Install a richer metering rod or jet in the carburetor.

La Salle With Planed Heads Has Vapor-Lock Tendency

I acquired a '38 La Salle some time ago and due to warped heads it blew the compression into the cooling system. To correct this I had the heads reground .025. Now the car has a tendency to vapor lock.

Would the fact that someone has used a copper gas line from the fuel pump to the carburetor tend to cause vapor lock? Perhaps an advanced timing would be necessary due to the slightly higher compression caused by the head grinding job. I have had the block and radiator thoroughly cleaned. R. H. Browning, 2898 Broadway, New York 25, N. Y.

VAPOR lock is usually caused by the gas boiling in the line between the fuel pump and carburetor. In your case, wrap insulation around the gas line where it passes the exhaust manifold. Also, if possible, install some type of deflector to ward off the heat from the carburetor.

Locating Engine Noise In Roaring Lincoln

We are having engine roar trouble with a 1941 Lincoln 12. This motor has been completely overhauled and the noise is still there. We would appreciate any information you can give us on this job. Frankie & Johnnie's Service, P. O. Box 157, Castroville, Cal.

YOU do not mention whether this roar is heard while driving or standing still. If the noise can be heard when the car is standing still and at a certain throttle speed, I would suggest making the following checks.

Run engine with fan belt removed, examine the muffler for loose plates and exhaust pipe touching the frame. Also make sure the rubber motor mountings are in good condition. Check the air cleaner for loose baffles on the inside.

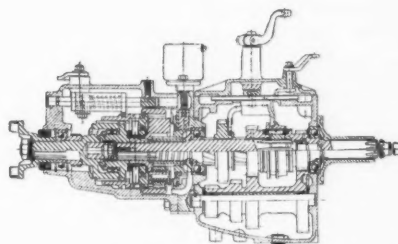
If the noise sounds like vibration, try depressing the clutch pedal to see if that makes any difference. If it clears up the condition, then you will know that the vibration is caused by a clutch that is out of balance or a loose flywheel. If this check fails to make any difference you should look at the vibration damper on the front of the crankshaft.

I believe that by making the following checks outlined above, you will be able to isolate this noise. When you have done that it is a

simple matter of bringing it down to one condition which should not be difficult.

Studebaker Has Clicking Noise in Transmission

We have recently had a 1940 Studebaker Champion come in with a clicking noise in first gear. It sounds as though the noise could be due to a broken tooth in first gear. However, this was not the case. We replaced in the transmission, all parts that appeared to be worn. These parts included front and rear bearings, cluster gear bushings and shaft (cluster gear shaft). We also replaced two bad universal joints. All other transmission parts seemed to be in good condition. However, the original clicking noise, still in first gear only, is still present.



We would appreciate any suggestions or possible solution you could offer. John F. Danke, J. & J. Service Station, Lovering Ave. and Scott Street, Wilmington, Del.

I WOULD suggest removing this transmission once more as I am sure you have overlooked something. Before removing it, see if the car will make the same noise in reverse gear. If it does, look for a chip imbedded in the low and reverse sliding gear. If noise isn't heard in reverse, check for chips imbedded in the cluster gear. I feel quite sure the trouble lies in the gears.

Cooling System Trouble On New Ford Engine

We have trouble, which we hope you can help us correct, with a 1939 Ford. This car had a nearly new 100-hp. engine when purchased. I believe it may have had dual carburetors on it at one time.

The motor has always performed well but, when purchased, it had a red rust colored substance in the radiator. Two reverse flushes failed to remove it. We used a chemical cleaner followed by a back flush. After each flush the water would clear until the engine was raced a couple of times and the color would return.

The car always runs at about 160 deg. We replaced the radiator and steamed the block out. The color returned in the same manner and now the car's running temperature is 170 deg. and 180 deg. We have a new distributor and carburetor on the car. The car will go up to 180 deg. on every hard pull or at a rate of 60 or 70 m.p.h.

We believe this deposit may be a radiator seal that has been placed in there in too strong a mixture but we don't know how to remove it. William Howey, Howey's Sales & Service, Route 45, Mantua, N. J.

I BELIEVE your trouble is caused by scale formations in the cylinder block. This scale loosens and then gets into the top of the radiator core causing poor circulation.

I would suggest removing the cylinder heads and examining the gaskets for possible leaks.

For a permanent cure for your rust condition, mix a solution of 20 per cent hydrochloric acid and let it remain in the block overnight and flush out the block thoroughly in the morning. When using this solution, disconnect the radiator hoses. After thoroughly flushing the block, I recommend that you add a good brand of rust inhibitor.

Chevrolet Gets Noisier After Complete Overhaul

I have a 1941 Chevrolet on which the motor, at about 50,000 miles, developed a motor knock on a hard pull. We took the motor down. In rocking the crankshaft the timing gear seemed to have very little wear so I adjusted all the main bearings, taking out .006 to .008 of shims. I installed new .003 over-size piston pins and standard to .009 piston rings. The cylinder showed up to

(Continued on page 68)

Clearing House Continued from page 67

.010 wear. I deglazed all cylinder walls, installed pistons and bearings.

This is the first I have ever found the mains looser than the rod bearings. Can you tell me the cause of this? I also planed .015 off the cylinder head to give it more pick-up. I installed new plugs, points and carburetor and tuned up the engine. The valve clearance was .006 and .013 hot. Now the motor works fine, but is noisier than before at idle and worse when speeding up while driving on the road.

Could you tell me if a new timing gear would help or what suggestion you may have to improve this condition? Robert H. Orner, Bendersville Garage, Bendersville, Pa.

MY first suggestion would be to remove the valve push rods and check them for bends as it is possible that one or more may be touching the valve side plate.

Before tearing the engine apart I would try shorting the spark plugs to define the noise down to one cylinder. If this cannot be done, the noise is either caused by the timing gear or a loose flywheel.

A timing gear noise can usually be detected when the engine is running a little past idle speed. Short circuit one or two spark plugs to make the engine run uneven. This

should produce a sharp chatter if timing gear is loose.

It is hard to understand why the main bearings were looser than the rods. My guess would be that either badly diluted oil was used or the job was run low on oil at one time. As you know, the troughs in the oil pan would supply the dippers on the connecting rods a few seconds after the oil pump ran dry.

Chevrolet Won't Idle Right—Runs Rich

We have a 1946 Chevrolet on which we can't seem to make it idle properly. Adjusting the low speed jet helps some but it still runs on the rich side. We removed the low speed jets and made sure they were clean, and finally installed an overhaul kit. We tried the carburetor on another car and it worked fine. What do you think could cause this trouble? Ken's Auto Service, Lake George, N. Y.

I AM inclined to believe that your trouble is caused by the by-pass and air bleed holes being clogged. Some cases have been found where hard carbon formed in the carburetor throat restricting the air bleed hole, causing

insufficient air to mix with the gasoline before reaching the idle port. Cleaning these passages can be done with wires. Remove all the plugs and thoroughly clean all passages.

AUTOMOTIVE TRADE SCHOOLS

in California

Los Angeles:

Santa Monica Technical Institute, 2200 Virginia Street, Santa Monica, Calif.
National Schools, Inc., 4000 South Figueroa Street, Los Angeles 37, Calif.
Frank Wiggins Trade School, 1646 South Olive Street
Hemphill Diesel and Automotive School, 1601 South Western Avenue, Los Angeles 6, Calif.

San Francisco:

Samuel Gompers Trade School, 22nd and Bartlett Street

Oakland:

Laney Trade and Technical Institute, 240 East 10th Street

San Jose:

San Jose State College

in Oregon

Portland:

Adcox School, 237 N. E. Broadway
Multnomah College, 819 S. W. Sixth Avenue
Portland Apprentice School, 220 N. E. Beech
Diesel Training, Inc., Swan Island, 18

Eugene:

Eugene Vocational School

Astoria:

Astoria Public Schools

Chemawa:

Chemawa Indian School

Oregon City:

Oregon Public Schools

Klamath Falls:

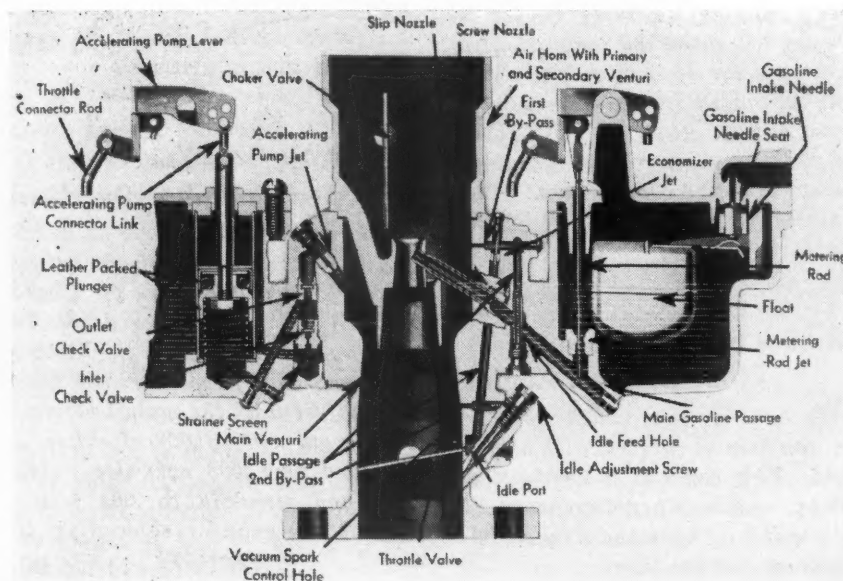
Oregon Vocational School

in Washington

Seattle:

Edison Technical School, Broadway and East Pine Street
YMCA Technical School, 909 Fourth Street

Cross section of 1946 Chevrolet Carburetor



FACING YOUR WAY



FRANK YARNALL, newly elected President of the Chicago Automobile Trade Assn.



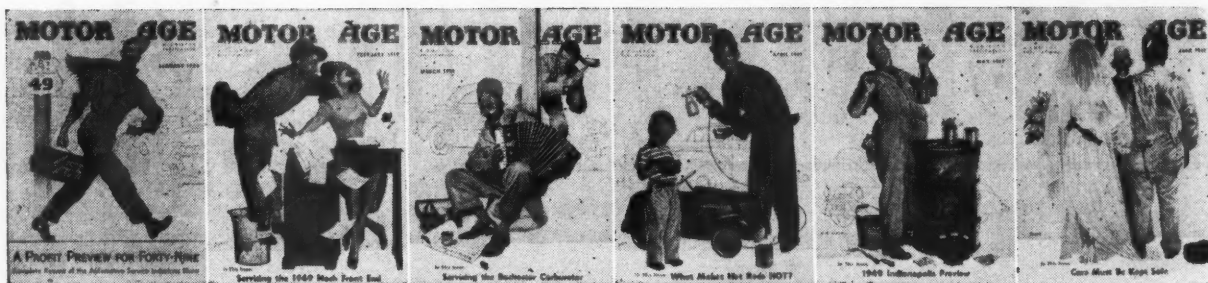
WALTER C. MALLORY, elected President of the Automotive Trade Assn. Mgrs.



CHARLES L. JACOBSON, recently named President of Chrysler Motor Parts Corp.



C.W. KLEINSCHMIDT, new President of National Standard Parts Association



MOTOR AGE INDEX for 1949 . . .

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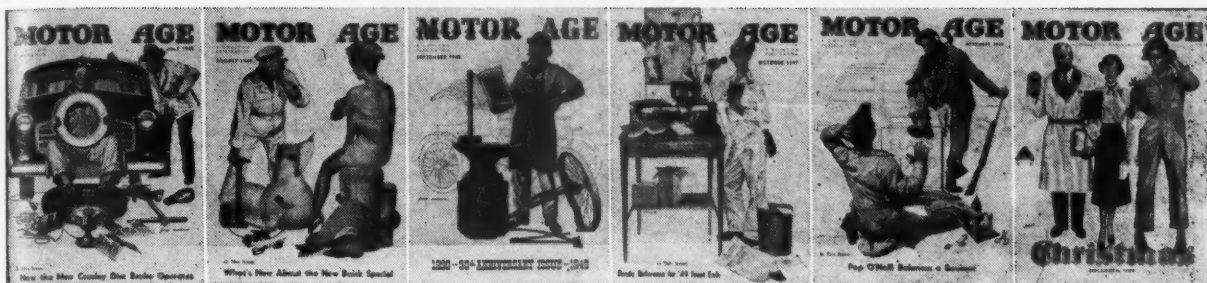
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50 Years Ago

in MOTOR AGE



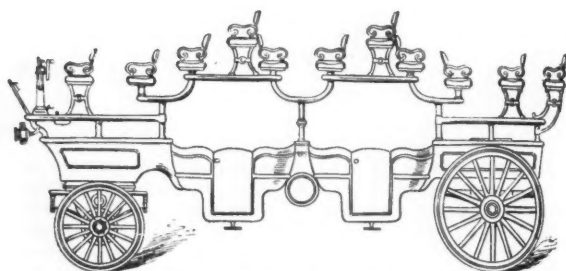
MINOR MENTION. Mrs. Hetty Green, the richest woman in America, has bought an automobile and intends to use it in going about her business in New York, with her own hand on the lever and foot on the brake. She will thus save the expense of a driver and be, as she likes to be, perfectly independent.

Some devout Catholic has presented the Pope, who has not ventured out behind a horse for, lo these many years, a motor carriage.

The automobile assumed a new role in the election in New York. Isidor Cohn was a candidate for assemblyman and electrified his prospective constituents by utilizing an auto to travel over the district and from the steps of which he made political speeches.

A country contemporary advises its readers, that, if wishes were automobiles, there would be a marked falling off in the shoe industry.

Motor Age, November 30, 1899



The latest creation of the company promoter

FOR SOCIETY MEN. The steam automobile is responsible for a plebeian innovation in society says the *New York Journal*. Within the past month several New York millionaires and sons of millionaires, all prominent in society, have put aside golf sticks, and yachts, and polo ponies, and devoting themselves assiduously to the study of injectors, pumps, tubular boilers

and steam engines, have been rewarded after successfully passing an examination at police headquarters, each with an engineer's license just like "Bill" who runs the elevator engine in the cellar.

It has all been done so quietly and quickly that the Engineers' Union has not yet recovered from the shock of surprise caused when a walking delegate announced at the last meeting that Alfred Gwyne Vanderbilt and Harry Paine Whitney had actually been granted licenses . . .

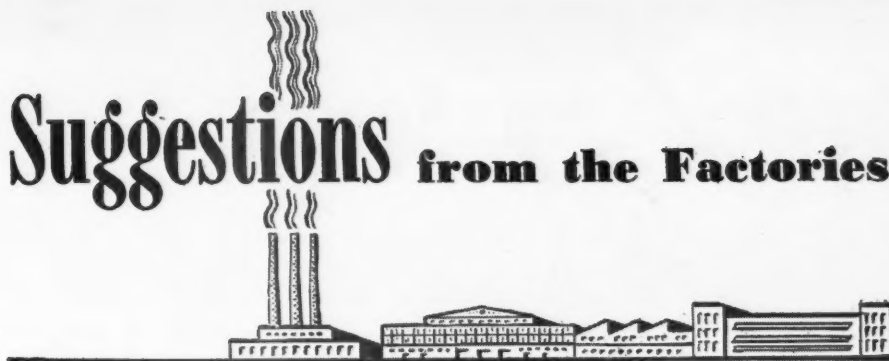
It all came about through the decision of the police board some weeks ago that under the law no locomobile could be operated in the city until the boilers were first tested and the persons operating them duly examined as to their ability as engineers.

Motor Age, December 14, 1899

PACKARD'S EXPERIMENTS. Two years ago Ward Packard, of Warren, Ohio, purchased a Winton vehicle. After operating it twelve months he commenced work on a vehicle of his own and spent another year in experiment. He is now using his own carriage and is so well satisfied of its merits that work has been commenced on fifteen for the market. Mr. Packard is a believer in plenty of material, evidently, for it appears that his vehicle is heavier and his motor more powerful than most of those so far produced. He claims, as a result, ability to travel at a good speed over any of the roads within 150 miles of Warren and that they are among the poorest, is common knowledge. The framework is made of brazed tubing, manufactured by the Columbia Mfg. Co., of Niles, Ohio. Should it prove satisfactory the company will install machinery for its manufacture in large quantities.

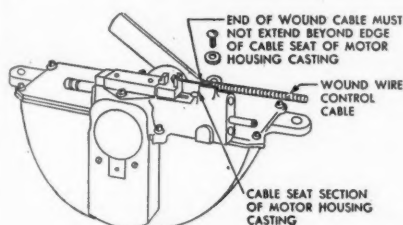
Motor Age, December 21, 1899

Service Suggestions from the Factories



Chevrolet Windshield Wiper Control Cable

Some service men have reported instances where the windshield washer or the windshield wipers were inoperative on 1949 Chevro-



let passenger cars, caused by improper positioning of the wound cable covering on the wiper control wire. When this wound cable is installed in such a manner that its end is either beyond or not up to the edge of the wiper motor housing "cable seat," interference will make the motor inoperative. The windshield wiper control cable should be repositioned so that the end of the wound cable is flush with the edge of the "cable seat" of the motor casting.

New Specifications on Chevrolet Suspension

The 1949 Chevrolet passenger car shop manual specifies an assembly torque of 45-60 ft. lbs. for assembly of upper control arm pivot pin bushings and shaft bushings.

Under certain conditions, when replacing arms or bushings, torque loads in excess of 45 ft. lbs. may cause distortion and binding of the upper control arm and possible stripping of the threads in the arm.

To avoid this condition the

torque specifications have been changed in production and service. New torque specifications are as follows:

1. Upper control arm pivot pin bushings—30-40 ft. lbs.
2. Upper control arm shaft bushing—30-40 ft. lbs.

When installing new arms or bushings, or when reinstalling oil parts, always lubricate the bushings on both the inner and outer threads.

The bushings should be started into position in the arm, making sure the threads index properly, checking position of arms by scale measurement. Tighten the bushings until they seat tightly in the arm with the shoulder under the hex head of the bushing tight against the tapered shoulder in the arm. Tighten to 30-40 ft. lbs. torque.

Oil Pump to Rear Main Gasket Discontinued

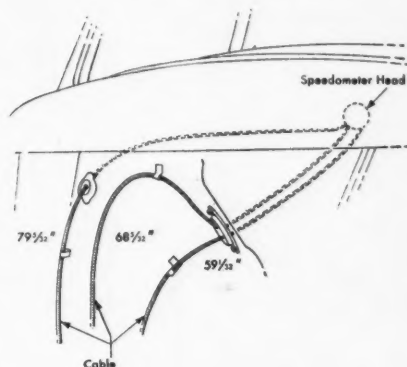
It has been announced, by the Cadillac factory engineering department, that the oil pump to rear main bearing cap gasket, Part #1451839, is no longer required on 1949 engines. It has been cancelled effective with engine #55,651.

Correct Plymouth Speedometer Cable Lengths

Due to the fact that three different length speedometer cables are used on P-15 Plymouth cars, difficulty may be experienced in identifying the proper one when this service is needed. The correct cable length may be ascertained by a visual inspection.

Also, before any speedometer cable is installed in the cable hous-

ing, the cable should be tested for kinks. An easy way to check this is to lay the cable on a flat table in the form of a large letter "S" and then rotate the cable slowly by hand, checking for any tendency of a



whipping action in any portion of the cable. If any such condition is apparent, a new cable should be installed. Lubricate the new cable with a good fibrous type lubricant.

The length of cables shown in the illustration include the drive ends. If a cable is too long or kinked it may cause speedometer "pointer waver."

Editor's Note—DeSoto Front End Specifications

1949 De Soto front end specifications are as follows:

Caster

Minus 1 deg. to minus 3 deg.

Minus 2 deg. preferred.

Camber

0 deg. to plus 3/4 deg. (left side to be 1/4 deg. to 1/2 deg. higher than the right).

Toe-in

0 to 1/16 in., 0 preferred.

The specifications given in "Ready Reference for '49 Front Ends," MOTOR AGE, October, page 40, were in error.



WHOA!

SOME OF THE EARLY MODEL AUTOS HAD 3 HAND-LEVERS, 3 FOOT-LEVERS, 2 HANDWHEELS AND A BELL!



IN RAFAEL, CALIFORNIA ONCE HAD A LAW COMPELLING MOTORISTS TO STOP WITHIN 300 FEET OF A HORSE.

**NOT RESPONSIBLE
FOR WORK LEFT
OVER TEN YEARS**



**WORKING 8 HOURS,
EVERY DAY, IT WOULD
TAKE A PERSON OVER
7 YEARS TO BUILD AN
AUTO BY HAND.**



America's school children and their teachers know what it takes to make traffic safe!

The same kind of caution among all of us would prevent many street and highway accidents!

TAKING it easy" is one important first step toward real traffic accident prevention in any community.

Police departments, the nation over, urge pedestrians to "take it easy" when they step off the curb—advise drivers to "take it easy" when they step on the gas.

Too few of us, perhaps, pay enough heed to the suggestion—but America's youngsters of grade-school age very definitely do. Their record is a splendid one.

A record to be proud of

National Safety Council figures show a decrease of 30% in the traffic death rate in the 5-14 age group since safety teaching in the schools began.

Enlightened school systems de-

serve everyone's gratitude for introducing traffic safety instruction programs.

Teachers themselves, often at a sacrifice of leisure time, organize and supervise schoolboy and school-girl traffic safety patrols.

Children take to the idea of accident prevention with a zest, when they're given a continuing responsibility for putting it into practice.

The good work is even extending into the high schools now. More and more courses of driving instruction are being instituted.

New pace-setters needed

Thoughtful Americans realize, of course, that it's the grown-ups of the nation, as well as the youngsters, who should be striving to cut the accident rate.

The time has come for every individual to play a personal part in reducing street and highway mishaps.

Everyone can do something

One urgent need is for more intelligent, more considerate, more co-operative driving and walking. The result inevitably will be fewer accidents and a smoother flow of vehicles through congested areas.

As part of this nation's life and traditions for nearly 98 years, Studebaker feels confident that American initiative and resourcefulness can and will effectively cope with the traffic accident problem.

STUDEBAKER

Serving America with soundly built transportation vehicles since 1852

Current Engine and Tune-up Specifications

ENGINE			TUNE-UP DATA										STEERING																		
MAKE AND MODEL	Wheelbase (in.)	No. of Cylinders, Bore and Stroke	Taxable Hp.	Piston Displacement (Cu. In.)	Maximum Brake Hp. at Specified R.P.M. (with Bare Engine)	Compression Ratio	Compression Pressure at Cranking Speed (lbs.)	Spark Plug Make and Type	Rings				VALVES				IGNITION				Caster (Deg.)	Camber (Deg.)	Toe-In (in.)	King Pin Inclination (Deg.)							
									No. and Width	No. and Width	Oil	Seat Angle	Exhaust	Inlet	Operating Tapet Clearance	Deg. Inlet Opens Before or After TC	Timing	Breaker Point Gap	Cam Angle (Deg.)	Spark Plug Gap					Spark Occurs	Timing Marks Located					
Buick Special 40	121 1/2	8-3 1/2 x 4 1/2	30.8	248.1	110-3600	6.3	112	AC-48	2-3/8	2-3/8	2-3/8	45	372	.015H	.015H	.015	13BT	None	.015	.025	4BT	Fly	A 5 1/2	13	13	13	4 1/4	4 1/4	4 1/4	4 1/4	
Buick Super 50	121	8-3 1/2 x 4 1/2	30.8	248.1	115-3600	6.6	118	AC-48	2-3/8	2-3/8	2-3/8	45	372	.015H	.015H	.015	13BT	None	.015	.025	4BT	Fly	A 5 1/2	13	13	13	4 1/4	4 1/4	4 1/4	4 1/4	
Buick Roadmaster 70	126	8-3 1/2 x 4 1/2	37.8	320.2	150-3600	6.9	118	AC-48	2-3/8	2-3/8	2-3/8	45	372	.015H	.015H	.015	14BT	None	.015	.025	4BT	Fly	A 7	16 1/2	16 1/2	16 1/2	4 1/4	4 1/4	4 1/4	4 1/4	
Cadillac 61, 62, 60	(g)	8-3 1/2 x 4 1/2	46.5	331.0	160-3600	7.5	120	AC-48	2-3/8	2-3/8	2-3/8	44	343	HA	HA	.001	19BT	None	.015	.035	5BT	VD	A 5	18	18	18	5 5/16	5 5/16	5 5/16	5 5/16	
Cadillac	136 1/2	8-3 1/2 x 4 1/2	46.5	331.0	160-3600	7.5	120	AC-48	2-3/8	2-3/8	2-3/8	44	343	HA	HA	.001	19BT	None	.015	.035	5BT	VD	A 5	18	18	18	5 5/16	5 5/16	5 5/16	5 5/16	
Chevrolet Six, GJ-GK	116	6-3 1/2 x 3 3/4	29.4	216.5	90-3300	6.6	110	AC-46-5	2-1/2	2-1/2	1-1/8	30	341	.006H	.013H	.006H	18T	Fly	.021	.036	5BT	Fly	A 5	16	16	16	4-30"	4-30"	4-30"	4-30"	
Chrysler Six C-45	125 1/2	6-3 1/2 x 4 1/2	28.3	250.6	116-3600	7.0	135	AL-AR-5	2-3/8	2-3/8	2-3/8	45	341	.008H	.010H	.014	12BT	VD	.020	.038	4AT	VD	A 5	17	17	17	4 3/8 to 6	4 3/8 to 6	4 3/8 to 6	4 3/8 to 6	
Chrysler Eight C-46	131 1/2	6-3 1/2 x 4 1/2	33.8	323.5	135-3400	7.2	135	AL-AR-5	2-3/8	2-3/8	2-3/8	45	341	.008H	.010H	.014	12BT	VD	.018	.038	2AT	VD	A 5	21	21	21	4 3/8 to 6	4 3/8 to 6	4 3/8 to 6	4 3/8 to 6	
Chrysler Eight C-47	145 1/2	6-3 1/2 x 4 1/2	33.8	323.5	135-3400	6.7	135	AL-AR-5	2-3/8	2-3/8	2-3/8	45	341	.008H	.010H	.014	12BT	VD	.018	.038	2AT	VD	A 5	21	21	21	4 3/8 to 6	4 3/8 to 6	4 3/8 to 6	4 3/8 to 6	
Crosley Four, CD-49	80	4-2 1/2 x 2 1/2	10.0	44.0	26.5-5400*	7.8	.....	AL-AN7E	2-1/8	2-1/8	2-1/8	45	313	.004C	.006C	.009	5BT	.....	.020	.046	.025	8BT	Fly	B 2	4	4	6 1/2	6 1/2	6 1/2	6 1/2	
De Soto Six, S-13	125 1/2	6-3 1/2 x 4 1/2	28.3	236.6	112-3600	7.0	135	AL-AR-5	2-3/8	2-3/8	2-3/8	45	341	.008H	.010H	.014	12BT	VD	.020	.038	4AT	VD	A 5	17	17	17	4 3/8 to 6	4 3/8 to 6	4 3/8 to 6	4 3/8 to 6	
Dodge Six, D-28, D-30	(e)	6-3 1/2 x 4 1/2	25.3	230.2	103-3600	7.0	135	AL-AR-5	2-3/8	2-3/8	2-3/8	45	340	.008H	.010H	.014	8BT	VD	.020	.038	2AT	VD	A 5	15	15	15	4 3/8 to 6	4 3/8 to 6	4 3/8 to 6	4 3/8 to 6	
Ford Six, 88BA	114	6-3 1/2 x 4 1/2	26.1	225.8	85-3300	6.8	110	CH-H10	2-3/8	2-3/8	2-3/8	45	341	.010C	.013C	.015	11BT	VD	.025	.036	.030	TC	VD	A 4	17.3	17.3	17.3	5 1/2	5 1/2	5 1/2	5 1/2
Ford Eight, 88BA	114	6-3 1/2 x 4 1/2	32.5	239.4	100-3600	6.8	95	CH-H10	2-3/8	2-3/8	2-3/8	45	341	.010C	.013C	.015	11BT	CP	.015	.029	.030	2BT	.....	A 4	22	22	22	5 1/2	5 1/2	5 1/2	5 1/2
Ford Six, 495-496	123 1/2	6-3 1/2 x 4 1/2	26.3	226.2	112-3600	7.3	120	AL-A5	2-3/8	2-3/8	2-3/8	30	341	.014C	.014C	.014	10BT	VD	.020	.038	.032	4BT	VD	A 5	13 1/2	13 1/2	13 1/2	4 3/8 to 5 1/2	4 3/8 to 5 1/2	4 3/8 to 5 1/2	4 3/8 to 5 1/2
Hudson 500	119 1/2	6-3 1/2 x 3 3/4	30.4	232.0	112-4000	6.7	.....	CH-J7	2-3/8	2-3/8	2-3/8	45	341	.008H	.010H	.....	7-18BT	Fly	.020	.032	.032	TC	Fly	A 7	18 1/2	18 1/2	18 1/2	3 3/8	3 3/8	3 3/8	3 3/8
Hudson Six, 491-492	123 1/2	6-3 1/2 x 4 1/2	30.4	232.0	121-4000	6.5	119	CH-J7	2-3/8	2-3/8	2-3/8	45	341	.010H	.012H	.....	7-18BT	Fly	.020	.032	.032	TC	Fly	A 7	18	18	18	3 3/8	3 3/8	3 3/8	3 3/8
Hudson Eight, 493-494	123 1/2	6-3 1/2 x 4 1/2	28.8	254.0	128-4200	6.5	119	CH-H10	2-3/8	2-3/8	2-3/8	45	341	.008H	.008H	.....	10-18BT	Fly	.020	.032	.032	TC	Fly	A 7	18	18	18	3 3/8	3 3/8	3 3/8	3 3/8
Kaiser Six, 491-492	123 1/2	6-3 1/2 x 4 1/2	26.3	226.2	(d)-3600	7.3	120	AL-A5	2-3/8	2-3/8	2-3/8	30	341	.014C	.014C	.014	10BT	VD	.020	.038	.032	4BT	VD	A 5	13 1/2	13 1/2	13 1/2	4 3/8 to 5 1/2	4 3/8 to 5 1/2	4 3/8 to 5 1/2	4 3/8 to 5 1/2
Lincoln 9EL-9EH	(b)	8-3 1/2 x 4 1/2	39.2	336.7	152-3600	7.0	110	CH-H10	2-3/8	2-3/8	2-3/8	45	341	HA	HA	HA	14BT	VD	.016	.026	.030	4BT	VD	A 6	34 1/2	34 1/2	34 1/2	5	5	5	5
Lincoln 9EL-9EH	(b)	8-3 1/2 x 4 1/2	39.2	336.7	152-3600	7.0	110	CH-H10	2-3/8	2-3/8	2-3/8	45	341	HA	HA	HA	14BT	VD	.016	.026	.030	4BT	VD	A 6	34 1/2	34 1/2	34 1/2	5	5	5	5
Mercury 9CM	118	8-3 1/2 x 4	32.5	255.4	110-3600	6.8	115	CH-H10	2-3/8	2-3/8	2-3/8	45	341	.011	.015	.015	10BT	CP	.015	.028	.030	2BT	.....	A 5	22 1/2	22 1/2	22 1/2	5	5	5	5
Nash Statesman, 5040	112	6-3 1/2 x 4	23.4	184.0	85-3800	7.0	120	AL-A5	2-3/8	2-3/8	2-3/8	45	341	.015H	.015H	.019	6BT	None	.020	.035	.030	TC	VD	A 5	14	14	14	8 1/2	8 1/2	8 1/2	8 1/2
Nash Amb., 5060	121	6-3 1/2 x 4 1/2	27.3	234.8	115-3400	7.3	130	(m)	2-3/8	2-3/8	2-3/8	45	341	.015H	.015H	.022	8 1/2BT	None	.020	.035	.030	TC	VD	A 5	17	17	17	8 1/2	8 1/2	8 1/2	8 1/2
Oldsmobile 76	119 1/2	6-3 1/2 x 3 3/4	29.9	257.1	105-3400	6.5	125	AC-45	2-3/8	2-3/8	2-3/8	30	342	.008H	.011H	.012	5BT	None	.020	.035	.040	TC	Fly	A 5	18 1/2	18 1/2	18 1/2	4-29 3/4"	4-29 3/4"	4-29 3/4"	4-29 3/4"
Oldsmobile 88	119 1/2	6-3 1/2 x 3 3/4	45.0	303.7	135-3600	7.2	138	AC-44	2-3/8	2-3/8	2-3/8	45	342	HA	HA	HA	14BT	None	.015	.022	.030	2 1/2BT	VD	A 5	21 1/2	21 1/2	21 1/2	4-29 3/4"	4-29 3/4"	4-29 3/4"	4-29 3/4"
Oldsmobile 98	125	8-3 1/2 x 4 1/2	45.0	303.7	135-3600	7.2	138	AC-44	2-3/8	2-3/8	2-3/8	45	342	HA	HA	HA	14BT	None	.015	.022	.030	2 1/2BT	VD	A 5	21 1/2	21 1/2	21 1/2	4-29 3/4"	4-29 3/4"	4-29 3/4"	4-29 3/4"
Packard Eight	120	8-3 1/2 x 4 1/2	39.2	268.0	135-3600	7.0	.....	(k)	2-3/8	2-3/8	2-3/8	45	341	.007H	.010H	.012	15BT	.....	.015	.027	.028	6BT	.....	A 7	18	18	18	5 5/8"	5 5/8"	5 5/8"	5 5/8"
Packard Super Eight	127	8-3 1/2 x 4 1/2	39.2	327.0	150-3600	7.0	.....	(k)	2-3/8	2-3/8	2-3/8	45	341	.007H	.010H	.012	15BT	.....	.015	.027	.028	6BT	.....	A 7	19	19	19	5 5/8"	5 5/8"	5 5/8"	5 5/8"
Packard Custom Eight	127	8-3 1/2 x 4 1/2	39.2	356.0	160-3600	7.0	.....	(k)	2-3/8	2-3/8	2-3/8	45	341	.007H	.010H	.012	15BT	.....	.015	.027	.028	6BT	.....	A 7	19	19	19	5 5/8"	5 5/8"	5 5/8"	5 5/8"
Plymouth Six, P17, P18	(t)	6-3 1/2 x 4 1/2	25.3	217.8	97-3600	7.0	135	AL-AR5	2-3/8	2-3/8	2-3/8	45	340	.008H	.010H	.014	12BT	VD	.020	.034 1/2	.038	2AT	VD	A 5	15	15	15	4 3/8 to 6	4 3/8 to 6	4 3/8 to 6	4 3/8 to 6
Pontiac Six, 25	120	6-3 1/2 x 4	30.4	239.2	93-3400	6.5	191(f)	AC-45	2-3/8	2-3/8	2-3/8	30	312	.012H	.012H	.012	5BT	CC	.020	.037	.025	4BT	Fly	A 5	18 1/2	18 1/2	18 1/2	5	5	5	5
Pontiac Eight, 27	120	6-3 1/2 x 3 3/4	33.8	248.9	106-3600	6.5	189(f)	AC-45	2-3/8	2-3/8	2-3/8	30	312	.012H	.012H	.012	5BT	CC	.015	.031	.025	4BT	Fly	A 5	20 1/2	20 1/2	20 1/2	5	5	5	5
Studebaker Six, 9G	113	6-3 1/2 x 4 1/2	21.6	169.6	85-4000	7.0	120	CH-J7	2-3/8	2-3/8	2-3/8	45	312	.016C	.016C	.020	15BT	VD	.020	.038	.025	2BT	VD	A 5	10	10	10	5 1/4	5 1/4	5 1/4	5 1/4
Studebaker Six, 17A	(u)	6-3 1/2 x 4 1/2	26.3	245.6	102-3200	7.0	120	CH-J7	2-3/8	2-3/8	2-3/8	45	312	.016C	.016C	.020	15BT	VD	.022	.034	.025	2BT	VD	A 5	13 1/2	13 1/2	13 1/2	5 1/4	5 1/4	5 1/4	5 1/4
Willis Six, 663	104	6-3 3/4 x 3 1/2	21.6	148.5	72-4000	8.4	110	AL-A7-F	2-3/8	2-3/8	2-3/8	45	340	.014	.014	.....	5BT	.....	.020	.034 1/2	.030	TC	.....	A 5	12	12	12	5	5	5	5

ABBREVIATIONS
*—With Standard Accessories
+—Plus or Minus 1/2°
†—At 1/2° Camber
—Do not recommend using a dwell meter for checking point opening

(f)—Models 61 and 62—126 in., Model 60—133 in.
(g)—Top Ring P4 or AC104 or (h)—Left side 1/4° to 1/2° higher than right.
(i)—Upper Ring 1/2 in., Lower Ring 1/8 in.
(j)—Model 491—100; Model 492—112.

(f)—At 1000 Rpm.
(g)—Top Ring P4 or AC104 or (h)—Left side 1/4° to 1/2° higher than right.
(i)—Upper Ring 1/2 in., Lower Ring 1/8 in.
(j)—Model 491—100; Model 492—112.

AL—The Electric Auto-Lite Corp.
AT—After Top Center
BT—Before Top Center
CC—Cold
CC—Crankshaft and Camshaft Sprockets
CP—Automatic Adjustment
CP—Champion Spark Plug Co.
CP—Crankshaft Pulley

DH—Distributor Housing
FH—Flywheel
HA—Hydraulic Automatic Adjustment
TC—Top Center
TG—Timing Gears
VD—Vibration Damper

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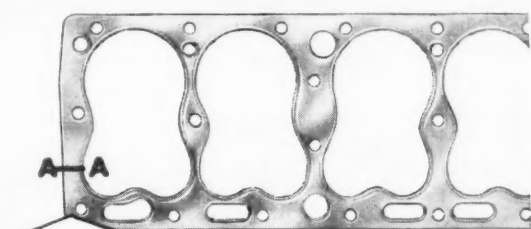
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P. J. FITZGERALD, President—1949



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Floor Space about 250 sq. ft. Founder—1906

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Torrington, Connecticut

*Service Mark Registration Pending.

FITZGERALD
Gaskets
SINCE 1906

Current Passenger Car Price, Weight and Body Table

Following are prices at factory for cars with standard equipment as of November 15, 1949.
State or local taxes, transportation and finance charges and optional equipment are extra.

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
BUICK					DE SOTO					LINCOLN (Continued)					PLYMOUTH				
Special					De Luxe					Twn. Sedan	3025	213	3238	4274	DeLux-P17				
Bus. Coupe	1695	124	1819	3610	Club Coupe	1871	105	1976	3455	Spt. Sedan	3025	213	3238	4259	Coupe, 3p.	1295	76	1371	2825
Sedan, 4d.	1745	127	1872	3650	Sedan, 4d.	1881	105	1986	3520	Convertible, 6p.	3700	248	3948	4419	Sedan, 2d.	1410	82	1492	2951
Sedan, 4d.	1795	130	1925	3700	Sta. Wagon	2805	154	2959	3915						Suburban	1740	100	1840	3105
Super 50					Carry-All	2075	116	2191	3565						DeLux-P18				
Sedan, 4d.	1913	146	2059	3735	Custom					MERCURY					Club Coupe	1435	84	1519	3034
Sedan, 4d.	2006	151	2157	3835	Club Coupe	2042	114	2156	3585	Coupe, 6p.	1845	134	1979	3321	Sedan, 4d.	1485	86	1551	3059
Conv. Coupe	2410	173	2583	3985	Sedan, 4d, 6p.	2059	115	2174	3645	Spt. Sedan, 4d.	1895	136	2031	3386	Spec. DeL-P18				
Ext. Wagon	2975	203	3178	4100	Convertible	2443	135	2578	3785	Convertible, 6p.	2255	155	2410	3591	Club Coupe	1515	88	1603	3046
R'dmaster 70					Sedan, 8p.	2713	150	2863	4200	Sta. Wagon	2545	171	2716	3626	Sedan, 4d.	1540	89	1629	3079
Sedan, 4d.	2430	188	2618	4115	Suburban	3013	166	3179	4410						Conv. Ch. Cpe.	1875	107	1982	3323
Sedan, 4d.	2541	194	2735	4205						NASH					Sta. Wagon	2245	127	2372	3341
Conv. Coupe	2935	215	3150	4370	DODGE					Statesman									
Riv. Coupe	2985		3203	4420	Wayfarer, D29					Bus. Cpe., 2d.	1523	110	1633	2900	PONTIAC				
Ext. Wagon	3490	244	3734	4490	Coupe, 3p.	1525	86	1611	3065	Super					Chief-8				
CADILLAC					Roadster, 3p.	1635	92	1727	3145	Sedan, 2d.	1598	115	1713	2930	Bus. Coupe	1477	110	1587	3185
Series 61					Sedan, 2d.				3180	Club Cpe., 2d.	1620	115	1735	2940	Sed. Coupe	1594	116	1710	3225
Club Coupe, 2d.	2615	173	2788	3880	Meadowb'k D30	1750	98	1848	3355	Sedan, 4d.	1623	115	1738	2985	Sedan, 2d.	1594	116	1710	3245
Tour. Sedan, 4d.	2715	178	2893	3950	Coronet D30					Custom					Sedan, 4d.	1642	119	1761	3275
Series 62					Club Coupe	1812	102	1914	3325	Sedan, 2d.	1748	124	1872		DeL. Sed. Cpe.	1684	121	1805	3230
Club Coupe, 2d.	2785	181	2966	3910	Sedan, 4d.	1825	102	1927	3360	Club Cpe., 2d.	1770	124	1894		DeL. Sed., 2d.	1684	121	1805	3260
Tour. Sedan, 4d.	2865	185	3050	3980	Twn. Sedan	1905	107	2012	3390	Sedan, 4d.	1773	124	1897	2990	DeL. Sed., 4d.	1732	124	1856	3290
Conv. Coupe, 2d.	3290	207	3497	4230	Conv. Coupe	2206	123	2329	3570	Ambassador					DeL. Conv. Cpe.	2000	138	2138	3485
Series 60					Sta. Wagon	2479	138	2617	3830	Super					Streaml. 8				
Tour. Sedan, 4d.	3595	233	3828	4150	Sedan, 8p.				4070	Sedan, 2d.	1904	135	2039	3325	Sed. Coupe	1574	115	1689	3260
Series 75					FORD					Club Cpe., 2d.	1925	135	2060	3335	Sedan, 4d.	1622	118	1740	3270
Bus. Sedan, 9p.	4365	285	4650	4685	Six	1236	97	1333	2871	Sedan, 4d.	1929	135	2064	3350	DeL. Sed. Cpe.	1684	120	1784	3270
Tour. Sedan, 4d.	4460	290	4750	4885	Bus. Coupe	1323	102	1425	2945	Custom					DeL. Sedan, 4d.	1712	123	1835	3315
Bus. Imp., 9p.	4545	294	4839		Tudor	1368	104	1472	2990	Sedan, 2d.	2054	144	2198		Sta. Wag. 6				
Sedan, 7p.	4670	300	4970	4685	Fordor					Club Cpe., 2d.	2075	144	2219	3390	Wood	2385	158	2543	3680
Imperial, 7p.	4860	310	5170	4720	Custom 8	1405	106	1511	2948	Sedan, 4d.	2079	144	2223		DeL. Wood	2460	162	2622	3540
CHEVROLET					Tudor	1405	106	1511	2928	OLDSMOBILE					DeL. Metal	2460	162	2622	3490
Styleline GJ					Club Coupe	1405	106	1511	2928	Series 76-8					Chief-8				
Bus. Coupe	1250	89	1339	3000	Fordor	1450	109	1559	2993	Series 76-8					Bus. Coupe	1542	114	1656	3240
Sedan, 2d.	1320	93	1413	3035	Eight					Club Coupe	1615			3260	Sed. Coupe	1659	120	1779	3285
Spt. Coupe	1325	93	1418	3010	Bus. Coupe	1318	102	1420	2911	Club Sedan	1640			3290	Sedan, 2d.	1659	120	1779	3315
Sedan, 4d.	1365	95	1460	3075	Tudor	1393	106	1499	2965	Twn. Sedan	1700			3335	Sedan, 4d.	1707	122	1829	3360
Fl'tline GJ					Fordor	1438	108	1546	3030	Sedan	1710			3340	DeL. Sed. Cpe.	1749	125	1874	3300
Sedan, 2d.	1320	93	1413	3065	Custom 8	1480	110	1590	2988	Club Cpe., DeL.	1750			3315	DeL. Sedan, 2d.	1749	125	1874	3325
Sedan, 4d.	1365	95	1460	3085	Tudor	1480	110	1590	2988	Club Sed., DeL.	1775			3355	DeL. Sedan, 4d.	1787	127	1924	3380
Styleline GK					Club Coupe	1485	111	1596	2968	Twn. Sed., DeL.	1835			3400	DeL. Conv. Cpe.	2085	141	2206	3560
Sedan, 2d.	1395	97	1492	3085	Fordor	1525	113	1638	3033	Sedan, DeL.	1845			3375	Streaml. 8				
Spt. Coupe	1410	98	1508	3055	Conv. Coupe	1820	129	1949	3274	Conv. Coupe	2010			3580	Sed. Coupe	1639	119	1758	3315
Sedan, 4d.	1440	99	1539	3125	Sta. Wagon	2118	146	2264	3563	Sta. Wag., DeL.	2070			3680	Sedan, 4d.	1687	121	1808	3360
Conv. Coupe	1740	117	1857	3355	FRAZER					Series 88-8					DeL. Sed. Cpe.	1729	124	1853	3340
Sta. Wag., Wood	2130	137	2267	3500	Sedan	2264	131	2395	3455	Club Coupe	2005			3550	DeL. Sed., 4d.	1777	126	1903	3380
Sta., Wag., Steel	2130	137	2267	3450	Manhattan	2446	141	2595	3514	Club Sedan	2030			3585	Sta. Wag. 8	2450	161	2611	3740
Sedan, 2d.	1395	97	1492	3090	HUDSON					Twn. Sedan	2080			3625	Wood	2450	161	2611	3605
Sedan, 4d.	1440	99	1539	3115	Super 6					Sedan	2100			3615	DeL. Wood	2525	165	2690	3695
CHRYSLER					Coupe, 3p.	1915	138	2053	3480	Club Cpe., DeL.	2130			3590	DeL. Metal	2525	165	2690	3550
Royal 6					Brougham	2013	143	2156	3470	Club Sed., DeL.	2155			3615	STUDEBAKER				
Club Coupe	2002	112	2114	3495	Club Coupe	2058	145	2203	3480	Twn. Sed., DeL.	2215			3665	Champ. DeL.				
Sedan, 4d, 6p.	2021	113	2134	3550	Sedan, 4d.	2061	146	2207	3500	Conv. Coupe	2225			3645	Coupe, 3p.	1482	106	1588	2635
Sedan, 4d, 6p.	2675	148	2823	4200	Conv. Brghm.	2623	176	2799		Sta. Wag., DeL.	2400			3845	Sedan, 2d.	1547	110	1657	2720
Limousine, 8p.	2968	163	3131	4060	Commodore 6					Club Sedan	3100			3945	Coupe, 5p.	1572	111	1683	2705
Sta. Wagon, 9p.					Club Coupe	2205	154	2359	3550	Sedan	2240			3890	Sedan, 4d.	1577	112	1689	2750
Windor 6					Sedan, 4d.	2228	155	2383	3540	Club Sed., DeL.	2360			3840	Ch. Reg. DeL.				
Club Coupe	2186	122	2308	3631	Conv. Brghm.	2768	184	2952		Sedan, DeL.	2430			3925	Coupe, 3p.	1552	110	1662	2640
Sedan, 4d, 6p.	2206	123	2329	3681	Super 8					Conv. Cpe., DeL.	2790			4200	Sedan, 2d.	1617	114	1731	2725
Conv. Coupe	2586	143	2741	3945	Brougham	2093	152	2245		Hol. Cpe., DeL.	2790			4000	Coupe, 5p.	1642	115	1757	2715
Sedan, 4d, 6p.	2860	157	3017	4290	Club Coupe	2138	154	2292	3495	PACKARD					Sedan, 4d.	1647	115	1762	2755
Limousine	2980	164	3144	4430	Sedan, 4d.	2141	155	2296	3525	Eight					Convertible	1955	131	2086	2900
Saratoga 8					Commodore 8					Club Sed., 2d.	2094	130	2224	3740	Commr.				
Club Coupe	2448	136	2584	4037	Club Coupe	2285	163	2448	3570	Tour. Sed., 4d.	2118	131	2249	3815	Coupe, 3p.	1792	127	1919	
Sedan, 4d, 6p.	2473	137	2610	4103	Sedan, 4d.	2308	164	2472	3600	Sta. Sedan	3255	194	3449	4075	Sedan, 2d.	1857	131	1988	3215
New Yorker 8					Conv. Brghm.	2848	193	3041		DeLux 8					Coupe, 5p.	1882	132	2014	3215
Club Coupe	2558	142	2700	4048	KAISER					Club Sed., 2d.	2221	137	2358	3770	Sedan, 4d.	1897	132	2019	3255
Sedan, 4d, 6p.	2583	143	2726	4113	Special	1869	126	1995	3345	Tour. Sed., 4d.	2245	138	2383	3840	Com. Reg. DeL.				
Conv. Coupe	3039	167	3206	4277	Traveler	1958	130	2088		Super 8					Coupe, 3p.	1907	134	2041	
Twn. and Cty. 8					De Luxe	2064	131	2195	3400	Club Sed., 2d.	2449	159	2608	3800	Sedan, 2d.	1972	137	2109	3220
Conv. Coupe	3785	205	3970	4630	Virginian	2828	169	2995		Tour. Sed., 4d.	2473	160	2633	3870	Coupe, 5p.	1997	138	2135	3220
Imper.					LINCOLN					DeL. Ch. Sed.	2721	173	2894	3855	Sedan, 4d.	2002	139	2141	3265
Sedan, 4d.	4425	240	4665	4300	Coupe, 6p.	2350	177	2527	3959	DeL. Tr. Sed.	2745	174	2919	3925	Land Cruis.	2180	148	2328	3355
Sedan, 4d, 6p.	4970	259	5229	5250	Spt. Sedan, 4d.	2395	180	2575	4009	Conv. Vict. Cpe.	3154	196	3350	4110	Convertible	2313	155	2468	

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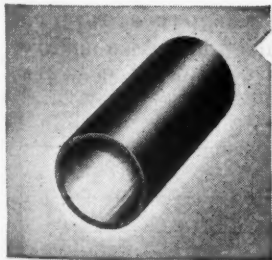
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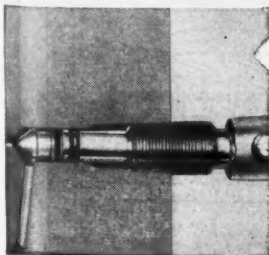
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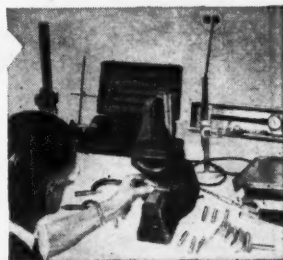


New "I.S.D." power cylinder. Greater wear resistance and a more positive seal between cylinder wall and cup leather means longer jack life . . . smoother, trouble-free operation.

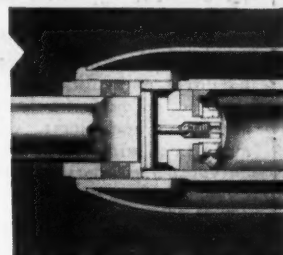


New self-centering finger tip control. Ingenious control mechanism prevents valve seat wear and eccentric binding. It's leak-proof and trouble-free, provides more accurate control of lowering.

Tolerance .0015" precision ground reciprocating parts. Wear from reciprocating parts reduced to minimum through centerless grinding to a tolerance of .0015"—further assurance of long, safe, trouble-free service.



New filtered "Hydra-matic" relief valve. A far reaching development modern hydraulic jack construction, this new valve eliminates cup washer scoring—one of the most frequent causes of jack failure.



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Valve Failures Continued from Page 43

exhaust valves is able to stand these high temperatures.

Most exhaust valves run normally at cherry red heat and still stand up for many miles of hard driving.

Valve Tappet Clearance

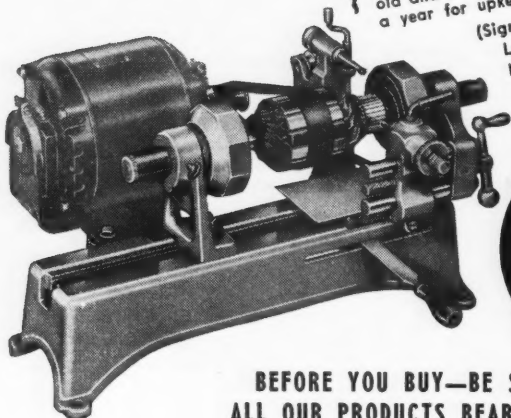
However, if valves do not have proper tappet clearance, the valve

will be held off its seat thus preventing contact with the cooler metal. Not only is the valve prevented from getting normal cooling, but it is exposed to flame around the edges of the head and under the head. This heat passing by the valve head soon burns the valve edge and ruins the valve for further use.

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(Signed) Gunnar W. Wanngren
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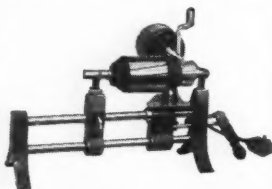


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Sticking Valves

Sticking valves are usually caused by carbon formations building up under the head to a point where the valve can't close. This condition usually takes place on the intake valves and is caused by faulty valve guides, by a faulty air cleaner, by a breather system which is operating improperly, or by burning low grade fuel.

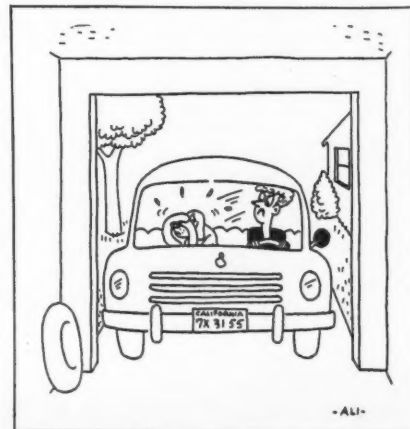
On some engines, altering the valve guides has proven very successful. The most common cure is to counterbore the valve guide. This will prevent excessive heat from reaching the top of the valve guide.

Any time valve burning is encountered, the cooling system should be thoroughly cleaned and, if the engine is equipped with a water distribution tube, that should be replaced. The exhaust manifold heat control valve should be operating properly.

Whenever a valve job is done on an engine, the valve seats should be checked for cracks and for wear. If no cracks are found, grind the seat to the proper angle with a suitable grinder. Many mechanics prefer a narrow seat, but others prefer a wider seat. In general, however, the manufacturer's specifications are the best.

A narrow seat would seem to have the following good points: Quicker seating, less room for carbon formation and increased seat pressure due to the concentration of valve spring and combustion pressures upon a smaller area.

The bad points would be increased tendency to pound, and the possibility of a groove forming around the valve face. Also narrow seats have less cooling effect on the valve face.



**Independent
Garagemen...**

**Bring In
MORE
Business
with Genuine
FORD
Parts**



Ford owners naturally prefer Genuine Ford Parts ... because they are *right* for Fords—made right to fit right and last longer. You'll get more Ford service business when you standardize on Genuine Ford Parts. And you'll save time, make more money. For example ...

AVOID "MATCHING" PROBLEMS WITH GENUINE FORD LACQUERS AND SYNTHETIC ENAMELS

Because all Genuine Ford Colors are carefully made to duplicate the original factory colors, there's no time-wasting trouble in matching patches on touch-up jobs.

Genuine Ford Color Patch is put up in handy 3-oz. cans that attach directly to a simple, inexpensive spray gun. (Ford Part No. 8A-17051.) Gun operates from air compressor or from inflated tire. Sells on sight to owners who do their own touch-up.

NOW AVAILABLE—Immediate delivery of 1950 Ford colors in all size containers and in 3-oz. cans.
Order from your nearest Ford dealer.

Working for You? This famous Genuine Ford Parts Sign is available to selected Independent Garages. It brings in more business. Ask your Ford Dealer how you can put it to work for you.

Genuine FORD Parts... Right for FORDS!

FORD Division of FORD MOTOR COMPANY

Engine Rebuilding . . . Continued from Page 50

the same reason, cylinders are bored to sizes for which pistons are easily available.

Before installing the crankshaft, the main bearing saddles on the block are carefully examined for evidence of wear or filing. If necessary, they are line-bored.

The crankshaft that goes back into the block is not necessarily the

same one which came out. In order to save time and complications, crankshafts are ground and put into a "bank," with their undersize dimensions indicated. Any shaft that does not match the standards set up by the rebuilder is discarded, so whatever shaft is put into a block will be dependable.

The same system is used for cam-

shafts. Camshafts, however, are subject to far less wear than the crankshaft. Since they revolve at one-half crankshaft speed, and are under considerably less load, camshaft bearing surfaces are seldom found to be badly worn. However, on engines which use a worm gear to drive the oil pump or distributor, there may be sufficient wear of the gear to warrant replacement of the shaft. If this is the case, the camshaft is usually replaced with a new one rather than replacing only the gear. Camshaft bearing surfaces, however, are ground and undersize bushings installed. If the camshaft bearing saddles on the block show wear, they are line-bored.

Assembly of the engine now begins with the installation of new main bearing shells and the crankshaft. A micrometer is used to check the proper running fit and oil clearance. Then the new or re-finished camshaft is installed with new bearings.

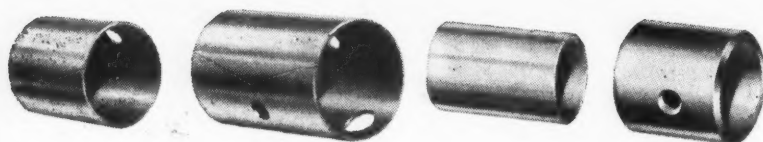
Valve guides are installed and valve seats are refaced to assure proper alignment with their guides and the proper width and angle for perfect seating. New valves are always used and, if necessary, refaced to insure correct seating. In addition, all valve springs are new.

Timing gears or timing chain and sprockets are always replaced.

The connecting rod, pistons, and

(Continued on page 84)

BUSHINGS



**FOR EXACTLY THE RIGHT BUSHING
for Best Results...**

Ask Your Federal-Mogul Jobber!

Good mechanics know the piston pin bushing is as important to its end of the connecting rod as the precision insert bearing is to the other end. Always replace the bushings—they are part of the job "insurance"! Your Federal-Mogul jobber has the complete line of both solid cast and the new, easy-to-use V-seam piston-pin bushings. Quality bronze, precision manufacturing and nationwide availability make Federal-Mogul the line for you . . . the line for good reconditioning jobs!

FEDERAL-MOGUL SERVICE
Division of Federal-Mogul Corporation
DETROIT 13, MICHIGAN

*The Complete Line—
More Than 7,000 Numbers
Engine Bearings (Main, Con-
necting Rod and Camshaft)
• Bushings • Connecting
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ditioned Connecting Rods •*



Rebabbitted Connecting
Rods • Connecting Rod
Bolts and Nuts • V-Seam
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1899—FIFTY YEARS OF CONTINUOUS BEARING EXPERIENCE—1949



EASY NEW WAY TO REBUILD CARBURETORS HAILED BY MECHANICS, SHOP OPERATORS!

New HYGRADE *Fingertip System*

JUST FOUR WEEKS AGO, we broke the news about the Hygrade Fingertip System—the easier, quicker, better way to rebuild carburetors right in the shop.

WE STATED THAT THIS NEW SYSTEM WILL

- make a first class carburetor rebuilder out of any competent mechanic in one week's time.
- lop 25% off the time sheet for mechanics who are now using old style carburetor kits.

BROTHER, DID WE START SOMETHING!

Postcards and letters have been pouring in from mechanics, foremen, shop owners from Pahokee, Fla., to Snohomish, Wash. They write: "If this new Hygrade system can do everything you say, count us in."

Hundreds have already had a chance to put the Hygrade Fingertip System into action. Practically to a man they agree: "This is so easy—why didn't somebody think of it before?"

Let us **PROVE** that the Hygrade Fingertip System can make extra money for you. Clip the coupon, paste it on a postcard and mail it today. We'll show you just how to get started in the profitable carburetor rebuilding business; how to do a better rebuilding job in less time if you are now using kits. You have everything to gain and nothing to lose.

\$69.75 PUTS YOU IN BUSINESS

You get the complete outfit:

1. New Hygrade loose-leaf manual and a constant flow of technical bulletins by mail.
 2. Assortment of 20 Hygrade Fingertip Carburetor Kits—to rebuild all Chevy, Ford, Plymouth carburetors.
 3. All the special tools and equipment you need.
 4. Cabinet especially designed to hold everything in place.
 5. Prompt Mail Clinic Service—our engineering department stands by to give you immediate help on any problem.
 6. "CARBURETOR REBUILDING SPECIALISTS" sign for your shop.
 7. Whole program of selling aids—folders, posters, postcards, etc.
- (The kits and the tools alone would cost you \$76. Figure in the manual—which can't be bought anywhere at any price—the cabinet, etc., and you have an outfit easily worth \$100.)

RUSH COUPON TO:

"HYGRADE" 35-31 Thirty-fifth Street
Long Island City 1, N. Y.



FREE! IMPORTANT BOOK!

Send for your copy of this valuable "better business" guide. Every single detail explained. Mail the coupon on a penny post card today. It's a 1c investment that can pay you thousands of dollars in dividends.



HERE'S HOW THE FINGERTIP SYSTEM MAKES YOUR JOB EASIER, QUICKER:

1. EASY-TO-FOLLOW MANUAL

Our new manual makes a carburetor as simple to put together as an Erector Set. It shows you how to tackle the carburetor one section at a time. The manual practically takes you by the hand through every step of the way. You can't go wrong.

2. ASSEMBLIES IN SEPARATE ENVELOPES

All the parts for each assembly are packed and labeled in separate envelopes, to match the manual. There's no fumbling around in a grab bag. You work step by step, envelope by envelope. As you finish each operation, you'll find that you have used all the parts in that particular envelope. Even if you're interrupted at the job, you can come back and pick up exactly where you left off without losing a minute.

ONE UNIVERSAL SYSTEM FOR ALL CARBURETOR MAKES

By the makers of
Blue Streak Ignition Products



HYGRADE PRODUCTS DIVISION, STANDARD MOTOR PRODUCTS, INC.
35-31 Thirty-fifth Street, Long Island City 1, New York

GENTLEMEN: Rush me your Free booklet, without obligation.

NAME

ADDRESS

CITY..... ZONE..... STATE.....

MY JOBBER IS.....

PASTE ON PENNY POST CARD

Engine Rebuilding . . . Continued from page 82

rings, which were assembled previously, are now ready for installation. They are soaked in oil, installed with a ring compressor, and the bearings and caps installed. After the new or rebuilt oil pump is put on, the oil pan is replaced. On engines with the splash-type of oil system, the feed-tubes in the oil pan are checked for accuracy

and full flow before the pan is installed.

Finally, the cylinder head is checked with a straight-edge for warpage or gasket wear, and if this condition exists, the head is planed, with from .006 to .010 removed.

The head is installed, with the use of a torque wrench, to the specified tension. In fact, all critical

parts including the main bearing caps and connecting rod bearings, are torqued on.

As described here, a passenger car engine has now been rebuilt according to the Automotive Engine Builders Association specifications, and carries a warranty of 90 days or 4000 miles against defects in material and workmanship. Over and above the rebuilt engine as it stands, a complete tune-up is suggested to the car owner, and to insure maximum efficiency, the clutch and pressure plate, water pump, distributor, carburetor, and fuel pump should be rebuilt. Also wiring and plugs should be replaced.



**Don't WISH
for more money
... MAKE it
with**

**HYPRESSURE Jenny
STEAM CLEANER**

Is profitable business passing you up because you're not equipped to take care of it?

With Hypressure Jenny you can add many "extra-profit" services to your line by doing the jobs car owners need—and want. Jenny brings new customers in, and keeps them coming back.

Hypressure Jenny will clean a car motor "like new", in 15 minutes . . . rid radiator and front-end grille work of bugs and leaves . . . cut grease, mud and road dirt from springs, frame and fenders . . . prepare cars for undercoating, etc. Pay for such services averages \$10 to \$12 an hour.

With combination Hypressure Jenny and Steam Thoro-Purge, you can increase your business as much as \$10,000 a year on cooling system cleaning alone.

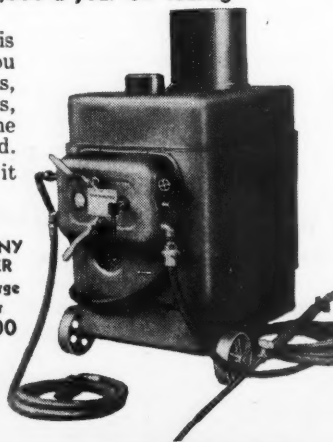
And all the while Hypressure Jenny is making you more money it is saving you money too by keeping your equipment, lifts, floors, walls, windows, driveways, lavatories, etc. clean as a pin at only one-tenth the time and cost you now take to clean them by hand.

Don't wish for more money . . . **MAKE it** with Hypressure Jenny Steam Cleaner.



Get the complete story in this FREE BOOKLET, "1001 Ways to Extra Profits". Write today.

Service Master
**HYPRESSURE JENNY
STEAM CLEANER**
with Steam Thoro-Purge
mounted on cover
Complete \$532.00



HYPRESSURE JENNY DIVISION

HOMESTEAD VALVE MANUFACTURING COMPANY

"Serving Since 1892"

P. O. BOX 95

CORAOPOLIS, PA.

Freight Fight

Chrysler Corp. and six smaller automobile manufacturers have won a point in the fight they have been waging for several years against what they call "undue differential" in freight rates enjoyed by General Motors and Ford on car shipments from assembly plants. Two ICC examiners have recommended that the preferential rates between GM and the other competitors—Chrysler, Hudson, Packard, Studebaker, Nash and Willys—be reduced from the present differential which ranges up to 56 per cent. They have recommended to the commission that the spread between rates paid by GM and Ford and the other companies be no greater than 25 per cent—which would be no less than 60 per cent of the first-class rate. The ICC will examine the findings and decide whether to approve the recommendation.

Packard Distribution

Packard Motor Car Co. has reorganized its distribution organization by dissolving its regional system and putting all zones under supervision of three divisional sales managers. Replacing the four regions previously set up will be three divisions known as Eastern, Western and Pacific Coast. These will be headed by Ernest J. Platfoot, Leo E. Fenn and R. J. Froiseth, respectively. One result of the reorganization will be the delegation of maximum authority to zone managers.

A complete set for the job in every Victor "Job Package"

You'll speed motor repairs—and be doubly sure of a dependable seal—when you use the Armstrong-Victor "Job Package." Each package contains all the cork gaskets for a specific repair job, labeled for quick identification.

All you have to do is tell the jobber the make and year of the engine and the job you are doing, and he will hand you all the cork gaskets you need—in one package.

Armstrong-Victor Gaskets are easier to install, too. Their special container prevents excessive shrinkage so that the gaskets always fit just as they come from the box.

You can get these Armstrong-Victor Gasket sets for all makes of cars, trucks, busses, and stationary engines at leading jobbers.

Save time and trouble next time you need cork gaskets. Just call your jobber and ask for the Victor "Job Package" for your job.



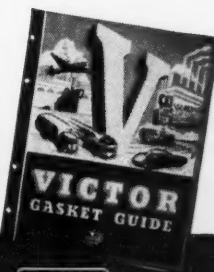
LOOK FOR THE TWO NOTCHES



VICTOR GASKET GUIDE

Victor publishes the most comprehensive Gasket Guide compiled—contains:

1. Factory numbers with Victor numbers.
 2. Special indexing where there are numerous motor models.
 3. Markings to show gasket set contents.
 4. Up-to-date gasket popularity ratings.
- Victor Manufacturing & Gasket Company,
5750 Roosevelt Road, Chicago 50, Illinois.



Armstrong-Victor



Primary Filtering
Bed of Pure Wood
Cellulose Fibre

Wood Cellulose
Fibre Dispersion
Strips

SEE

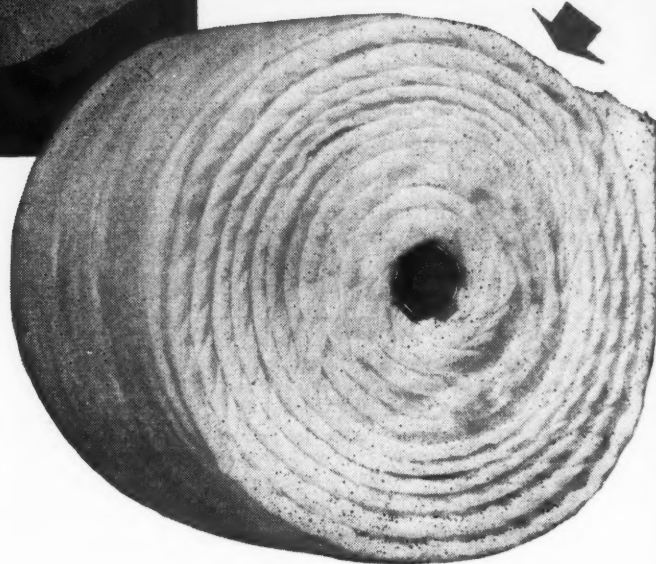
...HOW THIS MATERIAL IN A FORM LIKE THIS

● Inside every Walker "Laminar" Cartridge is an entirely new type of filtering material . . . a combination of pure wood cellulose fibre in *two different forms!*

This new "Laminar" material is chemically pure—will neither alter nor affect the characteristics of the oil itself.

It is positively uniform in structure to maintain the proper density. It has a definite affinity for dirt, contamination and moisture—to control the many different types of "engine manufactured" contamination, including water. It provides a filtering bed capable of removing even the tiniest foreign particles—yet still maintains a proper balance between "flow" and "particle retention" for effective filtration.

Wood cellulose fibre is the *only* filtering material to adequately meet these standards—the *only* filtering material that permits multiple filtration. It's the basis of Walker's superior filtering performance.



But even this combination of a pure wood cellulose fibre filtering bed wrapped in cellulose fibre dispersion strips is not the whole story. It is spirally wound in *many layers* around the center tube. From this patented construction has come an entirely new method of filtering oil—"Laminar"—or filtration through layers. It combines, for the first time, all three basic essentials of effective oil filtration—surface filtration—depth filtration—and progressive filtration. Laminar gets oil cleaner *quicker*—keeps oil cleaner *longer*.

MAKERS OF WALKER



SILENCERS



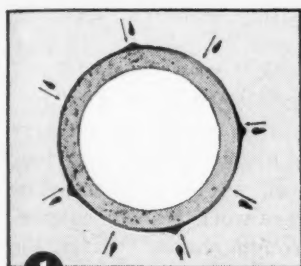
JACKS



ELECTRIC LIFTS

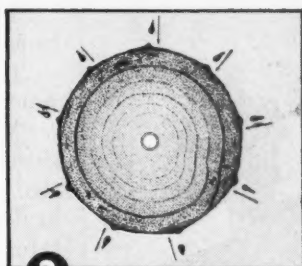
FOR YOURSELF...

CLEANS OIL 3 WAYS!



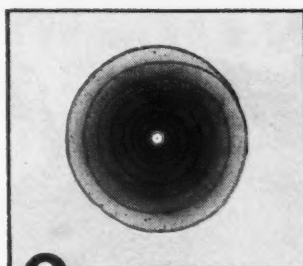
1 SURFACE FILTRATION

When oil enters the Walker cartridge it immediately encounters double-wrapped wood cellulose dispersion strips . . . which not only provide definite surface type filtration, but also disperse the oil over the entire surface of the filtering medium.



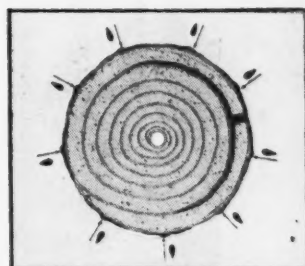
2 DEPTH FILTRATION

After passing through the dispersion strips, the oil is next subjected to depth filtration through the basic filtering bed of pure wood cellulose fibres—the density of which is controlled for a proper balance between "flow" and "particle retention."



3 PROGRESSIVE FILTRATION

As each successive layer is wound around the center tube, compression forces the pattern of the filtering bed to become finer and finer, more compact from outside to center . . . selectively removing smaller and smaller particles of micronic size.



CHANNEL-PROOF

Here's still another plus! Because of Laminar design, every Walker cartridge is absolutely channel-proof. There are no "low resistance" spots . . . no natural channels through which the oil can pass unfiltered. Should an accidental break occur in any single layer, the additional layers will prevent any channeling.

WALKER MANUFACTURING COMPANY OF WISCONSIN • RACINE, WISCONSIN

"AMERICA'S FINEST OIL FILTER"

WALKER

OIL FILTERS

WITH PATENTED *Laminar** CONSTRUCTION

*TRADEMARK

TAKES OUT THE DIRT THE ENGINE PUTS IN



armature, installed new brushes and gave the motor and switches a thorough check. Everything seemed perfect. The jalopy started with no trouble at all.

"Could we put it on the cuff until the first of the month?" asked Willie. "I'm a little short 'til after the dance."

Pop sighed in mock despair. "How do you expect a man to make a livin'?" he asked. He looked at the fragrant fir in the back seat. "A man hardly gets enough these days to buy himself a Christmas tree."

The boys laughed and drove off. About quarter past eight the fol-

lowing morning Pop's phone rang. On the other end was an irate Willie Heintz.

"Look," he said. "What kind of a repair shop do you run? That car of mine won't start again this mornin'. What are you goin' to do about it?"

So Tommy, who had been thoroughly schooled by Pop in the old belief that the customer is always right, hung up the receiver gently, told Pop what had happened, and went down to get the car. Once again it started easily and Willie followed the tow car back to Pop's shop.

"Want me to take the starting motor off, Pop?" Larry Tate asked. "I can fix it up."

"No," said Pop. "Let's take a look at that generator."

"The battery tests o.k.," Tommy explained.

"I know it," said Pop. "But I want to look at the generator."

"You're the boss," said Larry shrugging his shoulders, and took the cover off the generator. The brushes were worn and the commutator in rough shape. "Even the brush holders are pretty well shot, too," Larry commented. "But I don't see what this had to do with starting."

"The starter relay is grounded through the generator on this Buick. This car starts fine at times, then not at all at other times so a bad ground might be the answer. If this generator armature happened to stop on a worn spot, there would be no ground at all an' that could cause the trouble."

"How did you ever figure how that this starter relay is grounded through the generator?"

"Elementary, my dear Tate!" said Pop imitating Sherlock Holmes. "I looked it up in a wiring diagram while Tommy was down town getting the car."

Larry laughed mirthlessly as he turned to Tommy. "We get another little taste of Genius at Work."

"Right," Pop agreed blandly. "Reminds me of the missionary who had just been assigned to an island post. 'Do you know anything about religion here?' he asked the chief. 'Oh, sure,' the cannibal grinned back. 'We got a taste of it when the last missionary was here.'"



.. JOHNSON BEARINGS ARE ACCURATE AND UNIFORM

EVERY Johnson Sleeve Bearing is carefully multiple-checked for wall thickness and all dimensions before leaving the Johnson Bronze plant. Each one is uniform in machining and finish, and is correct in design, alloy and tolerance. With these multiple-checked Johnson Bearings installation time is always at a minimum.

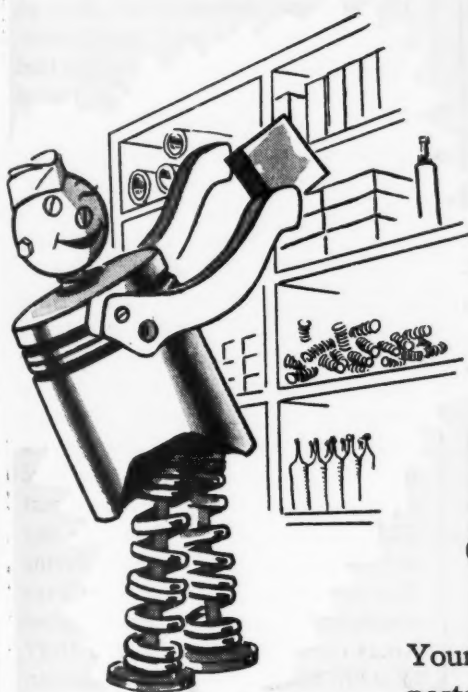
Johnson Bronze
SLEEVE BEARING HEADQUARTERS
455 SOUTH MILL STREET • NEW CASTLE, PA.

**INDEPENDENT
SERVICEMEN!**

CHEVROLET DEALERS OF AMERICA

are
**READY...
WILLING...**

and **ABLE** *to serve you*



Your Chevrolet dealer has big stocks of genuine Chevrolet parts for your use. When you sell genuine Chevrolet parts they help you 3 ways.

1. Give faster service to your customers.
2. Have the vehicle ready when promised.
3. Build greater customer satisfaction.

The dependable economy and long life built into genuine Chevrolet parts can result in more satisfied customers, the foundation of every growing business.



**PARTNERS
IN SERVICE**

**FOR YOUR BEST DEAL...
DEAL WITH YOUR
CHEVROLET DEALER**

**PARTNERS
IN SERVICE**



To Form a More Perfect Union USE PURITAN GASKA-SEALS

Puritan Gaska - Seals 1, 2, 3, are the gasketing materials that can handle any gasketing job in the automotive field. They enable the service man to form perfect unions that last—with-

standing anti-freeze, low or high temperatures. And when you use Puritan GASKA-SEALS you are making a more perfect union — lasting jobs that stand up.



GASKA-SEAL NO. 1 Hardening Type

Spreads easily. Sticks quickly. Sets hard. Especially recommended for water connections, push rod covers, oil pan, valve plates, transmission, differential housings. Resistant to anti-freeze and high temperatures.



GASKA-SEAL NO. 2 Non-Hardening Type

Spreads easily. Seals tightly but stays soft and pliable—easy to remove. Recommended for head gaskets, crank case assemblies, thermostat connections, oil and gas connections, etc. Resistant to anti-freeze and high temperatures.



GASKA-SEAL NO. 3 Liquid Type

Goes on with a brush. Stays permanently elastic at temperatures from 75°F below zero to 500°F above. Unaffected by gasoline, oil, anti-freeze or other automotive liquids. Use on all types of gaskets from metal-faced to natural rubbers. Use alone where close tolerances are required. Adhesive to all surfaces. Forms permanent seal but makes disassembly easy. Convenient-to-use can with long handle brush.

Keep these three Puritan GASKA-SEALS on hand. Each has its specific uses. With all three you are ready for any gasketing job. Order from your NAPA Jobber.



In Canada, F. R. RUSSELL
37 Croydon Rd., Toronto 10, Ontario

PURITAN COMPANY, INC.
ROCHESTER 6, NEW YORK

HYDRAULIC BRAKE FLUID AND FLUSHING FLUID • GASKA-SEAL NO. 1, 2 AND 3
SHOCK, JACK AND KNEE-ACTION OIL



Christmas Comes . . .

Continued from page 51

papers, direct mail or any other way. Motorists must visit the garage personally to find out what "today's Santa Claus special" happens to be. This increases contacts to a considerable degree and causes motorists to visit the garage throughout the holidays.

A special Christmas Shopping Checkup and motor tuneup, between November 1st and 27th is offered by another shop. At any time during this period the motorist may have his or her automobile placed in A-1 condition for the shopping spree connected invariably with Christmas. Advertising through local radio spots and small newspaper displays warns motorists that shopping during December means rushing about, often in inclement weather and on icy roadways. "Repair your car well in advance of jolly old December" is this shop's advertising theme during November.

A final item concerns the shop owner who keeps a record of patrons who have purchased vehicles or had their automobiles repaired during the past calendar year. To each and every such individual goes, via first class mail, a Christmas card signed by the garage management PLUS a voucher worth \$1 on any service transaction handled during January or February. These vouchers, plus the autographed Xmas card are mailed VIA FIRST CLASS MAIL, early in December, so that they will not be dumped unread and therefore unappreciated, in the nearest wastebasket like many Christmas circulars. Patrons who have patronized the garage steadily during 1949 deserve some tangible remembrance at Yuletide time.

This same garage reasons that many motorists receive cash in their Christmas stockings. With this salient thought in mind the garage in question offers a Post Christmas sale on December 26, 27 and 28. Used cars and slow moving or "dust catching" automotive accessories are offered for sale at great reductions during the three-day period so as to reduce the garage inventory for the bright and shiny New Year just ahead.

*Stock Up Now
for BIG PROFITS
This Winter!*

HARRISON

**HEATERS • DEFROSTERS
THERMOSTATS**

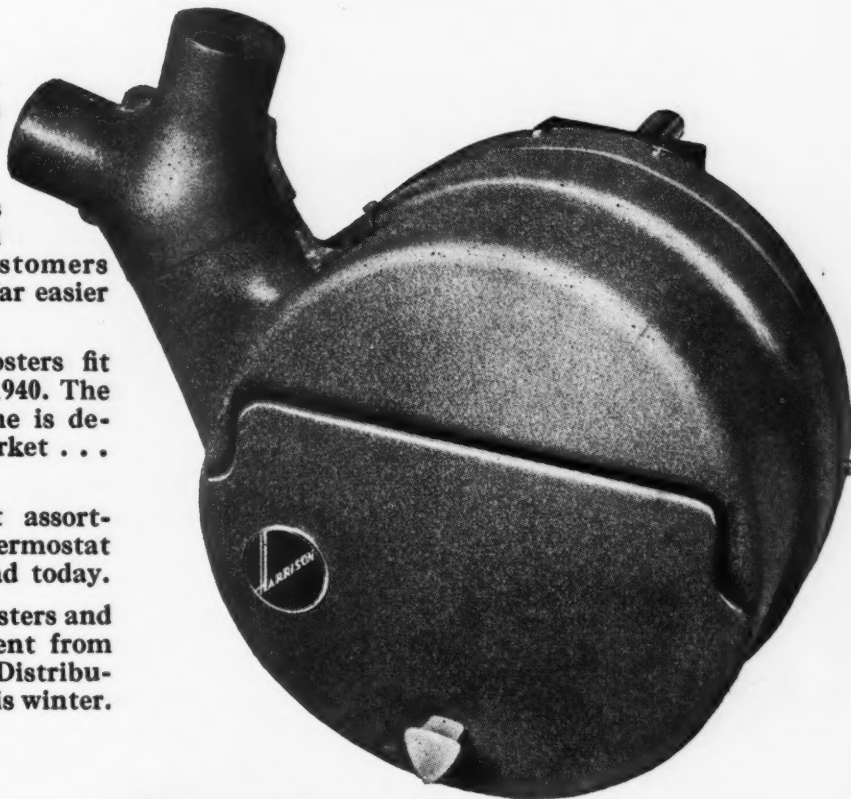
The fast-moving line of Harrison Heaters and Defrosters covers a wide range of car and truck requirements.

Harrison's efficient Heaters and Defrosters—improved in appearance—give your customers greater heat output . . . are far easier to sell and to install.

Harrison Heaters and Defrosters fit almost every car built since 1940. The low price of the Harrison line is designed to capture a large market . . . to swell your profits.

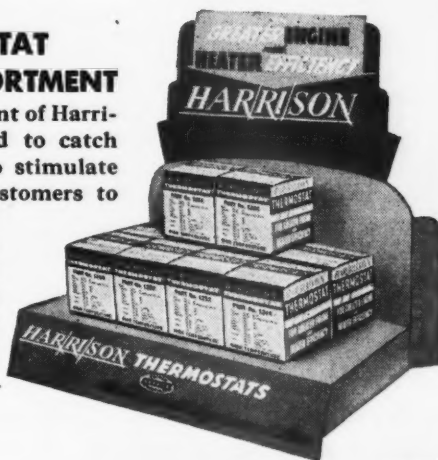
The 10-package Thermostat assortment includes the right thermostat for 90% of the cars on the road today.

Order Harrison Heaters, Defrosters and Thermostat Display assortment from your nearest United Motors Distributor and be set for big profits this winter.



**HARRISON THERMOSTAT
DISPLAY ASSORTMENT**

The colorful display assortment of Harrison Thermostats is designed to catch your customer's eye . . . to stimulate sales by reminding your customers to have their often-overlooked thermostat checked. The easy availability of the right thermostat for their car, plus the high regard the public has for well-known Harrison quality will produce sales results for you.



**HARRISON HEATERS
A UNITED MOTORS LINE**
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS



**SUPER DASH HEATER-
DEFROSTER COMBINATION**

The Harrison dual purpose Heater-Defroster is popular with comfort-conscious drivers everywhere. You'll find the turn-over of these Heater-Defroster Units at the top of your accessory sales list. Top quality is built in with an all-copper tube and center-type core, the largest capacity motor we have ever put in a heater, an 8-inch propeller fan, and large take-off tubes.

HARRISON

HARRISON RADIATOR DIVISION
GENERAL MOTORS CORPORATION, LOCKPORT, NEW YORK

Dealer Week Continued from page 45

Street to highlight the Know Your Automobile Dealer Week celebration, a limitation by civic authorities, and the full entourage was picked up after they left the main street. The parade followed an extensive route and wound up in the Plaza of the Civic Center where they remained on display for the public. "It was like an

abbreviated automobile show," the San Francisco dealer association reported. Several thousand people inspected the cars. San Francisco's Mayor Elmer Robinson issued a proclamation declaring Oct. 31 to Nov. 5 as "Know Your Automobile Dealer Week."

Miss Lanie Blackman, an attractive model, was queen of the pa-

rade. One section of the motorcade visited Catholic and Jewish orphanages and the Shriners' and Children's hospitals. Delighted orphans and child patients were given miniature models of the cars in the parade.

This good will venture produced many a misty eye among automobile dealers long regarded by the car-buying public as hard-hearted individuals, one observer says.

During the City Hall ceremony, San Francisco's "Red Feather" Girl was presented with a check representing the combined contribution of San Francisco's car dealers to the Community Chest.


Boston dealers didn't enthuse over Know Your Automobile Dealer Week because it came too close to the recent shortage of cars. Pittsburgh was suffering from the local effects of the steel strike. Chicago was busily planning its big Automobile Show. Know Your Automobile Dealer week just wasn't observed in Dallas or Houston. In one big state, "the fellows just wouldn't knock off from hunting" to do some of the things that they should do for their business.

Miami, Wilmington, New Orleans . . . Lewiston and Auburn, Maine; Buffalo, Kansas City . . . and the whole state of Iowa . . . from all these centers came reports of activity and with varying degrees of success.

Philadelphia dealers signed an ad which read: "Who Gets This \$18,216,508.66 pay-check?" The advertisement pointed out that that was the exact amount paid by members of the Philadelphia Automobile Trade Association to their employees last year.

In New Jersey, eighteen newspapers in eleven of the state's counties supported the campaign with widespread publicity. Throughout Tennessee there were newspaper ads, radio programs, window displays and parades.

Over all, it was regarded as a sound public relations effort and one which should be continued. One sideline comment went something like this: "I think the public has a better understanding of the dealers' position and problems than at any time since the war."



"it's in the cards"

when you sell

SERCO


for sealing

- radiators
- heads
- blocks

Steady volume, repeat business, satisfied customers. They all add up to profit...profit you get by selling SERCO.

SERCO seals all types of leaks in automotive cooling systems quickly and thoroughly. It's a one-application seal that sells and stays sold. SERCO remains in suspension in radiator coolants. It flows freely through an engine's cooling system sealing each leak, large or small, with a flexible wedge between the edges of the metal. SERCO forms a more lasting seal because it actually gains strength with heat and age.

Don't gamble with unknown, untried brands. Stock and sell quality SERCO products . . . used by millions of motorists all over the world and guaranteed satisfactory.



Ask your favorite jobber or write today for literature.

Service Supply Co.

1115 SEVENTH ST. • DENVER 4, COLO.

Dealers Everywhere Find

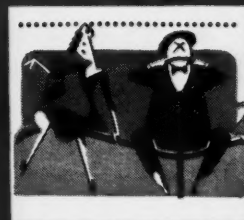
"Select-O-Seat" Sells More New Cars!

"CHOOSE YOUR OWN COMFORT"

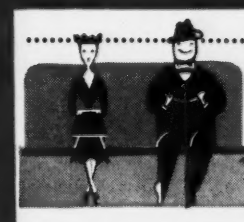
... because "Select-O-Seat" is adjustable to give the riding public "Personalized Comfort"



More than ever, Dealers Sell Comfort! When a dealer sells comfort he sells one of the most important features of a car. When he explains the superiorities of "Select-O-Seat" cushion comfort, plus the simple adjustment service available, he has a tremendous sales advantage!



Dealers show this CAN'T happen . . . It's easy for dealer salesmen to show their customers that unless the car's entire spring cushion is a "Select-O-Seat" design, the extra pocketed coils cannot be added to correct this discomfort shown above. "Select-O-Seat" sells more cars!



Without disturbing the upholstery, the service men, in over 15,000 dealerships of 8 leading makes of new cars, can easily adjust the comfort of "Select-O-Seat" cushions, whenever necessary. They simply flip extra pocketed coil springs into the base of the "Select-O-Seat" cushions in a matter of minutes for greater buoyancy, and to raise eye level for safer vision.

"Select-O-Seat" is a comfort treat! Cars factory built with "Select-O-Seats" require no adjustment to assure the average car buyer superior comfort . . . yet "Select-O-Seat" adjusts without delay to suit the special preference of any customer, regardless of weight or height!



* "Select-O-Seat" "CHOOSE YOUR OWN COMFORT"

Owners of new cars call it the greatest improvement in seating comfort known . . . Developed and produced by the world's leading supplier of cushion springs for over 40 years.

GENERAL OFFICES: DETROIT 11, MICH. . . IN CANADA: L. A. YOUNG INDUSTRIES, LTD., WINDSOR, ONT.

NEW...Automatic MAKE-UP

ANOTHER WEATHERHEAD FIRST



THE
MARK OF
QUALITY

Seven makes of cars now use hydraulic mechanisms to operate windows, folding tops, seats, etc. Many more are planning to use such equipment.

Nothing now on the market will service the flexible lines necessary to these units, except a top-heavy inventory of over 70 different high-priced lines. Some models have up to 9 lines.

Weatherhead has done it again! This new kit is a must for every car dealer, garage and body shop. A very nominal investment brings a supply of original equipment hose and fittings to make lines to order—all from the manufacturer of the original lines . . . Weatherhead.

Ask your jobber TODAY!

Services hydraulic operations on:

Cadillac
Chrysler

Hudson
Lincoln
Mercury

Oldsmobile
Packard

 RIGID MALE PIPE 1/8"

 FEMALE INVERTED 5/16"

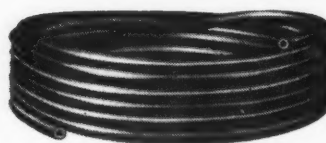
 SWIVEL MALE PIPE 1/8"

 INVERTED MALE SWIVEL 5/16"

 SWIVEL MALE
PIPE ELBOW 1/8"

 INVERTED MALE
SWIVEL ELBOW 5/16"

HOSE 1/4" I. D. H. 22



These six fittings are all that are necessary for all known installations to date.

This original equipment hose is furnished for replacement.

Window Lift Hose

KIT . . .

**SIX
PARTITIONS
FULL OF END
FITTINGS**



**HEAVY
CARDBOARD
BOX**

**GENEROUS
SUPPLY OF
HOSE IN
CARTON**



Look Ahead With

Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND 8, OHIO

Plants: Cleveland, O. Angola, Ind. Columbia City, Ind. St. Thomas, Ontario, Can.

**ORIGINAL EQUIPMENT MANUFACTURERS OF 1500 CAR PARTS
AMERICA'S LEADING JOBBERS ARE WEATHERHEAD JOBBERS**

Your Business . . . Continued from page 53

such and that you expect payment on the due dates.

Another reason why repairmen and dealers miss fire on collections is that they grant too much credit for their financial capacity. They give credit to good accounts and get their money promptly but they sell too much on credit. This produces a condition that most busi-

nessmen overlook and may put the seller in as bad a spot as his counterpart who goes broke because he has so many past due accounts on his books. If a repairman has \$2,000 on his books and his business is geared to this much credit every month, he really freezes this money in a permanent investment much like a fixed asset, such as a

lift or a compressor. His customers pay promptly but to keep business moving profitably he must replace every \$2,000 paid up by credit customers with another \$2,000 of new credit business. This is okeh as long as the repairman can stand it financially, but if he builds credit volume to, say \$4,000, he may find himself tied up for cash as much as the fellow who is overloaded with past due accounts.

One way to decrease the ratio of cash to credit sales is to insist upon cash for small orders, say under \$5 or \$10. Small bills are headaches to businessmen. Some customers take their time about paying small bills just because the amounts involved are small. They think that the few dollars they take their time about paying inconveniences no one or they feel that the seller won't press unduly because it doesn't pay to enforce collection.

Efficient collection practices consist of investigating new credit applicants carefully, giving credit only to those who are gilt-edged risks, stating your terms when the sale is made and making it clear that you expect payment before or on the due date, limiting the total credit extended to your financial capacity, installing an efficient collection system and operating it systematically, sending out statements the first of each month and not any old time during the month as too many do, analyzing your receivables monthly and classifying them as to past-due dates, following up all those that are past due with letters or phone calls and getting a commitment from them as to when they will pay if they can't settle at once. Next to getting the money, the important thing is to get a definite promise from the debtor when he will pay. Creditmen say that in 60 per cent of the cases they pay, whereas, if you let them put you off with an indefinite promise, less than 20 per cent settle in a reasonable time.

Keep your collection letters courteous even when you threaten to sue because a bad credit customer may become a good cash customer later on if you don't antagonize him. If you threaten to sue, go through with it, otherwise all subsequent duns will fall flat.



MR. JOBBER: KEEP YOUR SERVICE OUTLETS OPEN EVENINGS AND WEEK ENDS WHEN YOU ARE CLOSED

The motorist is busy driving evenings, week ends and holidays when you must be closed. He frequently needs fuel pump service at these times.

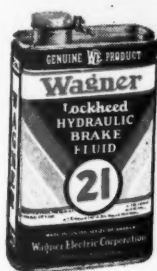
Protect your volume by enabling your service station customers to take care of that business at any time. See that they have Autopulse's 3-in-1 Counter Display Kit. Just three pumps, but they assure service for any car on the road. It's a smashing sales success wherever you introduce it.

Write for description and prices to Autopulse Corporation.

Sure, I have a fuel pump for your car

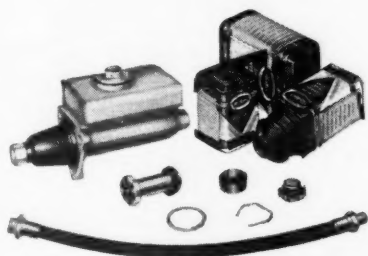
AUTOPULSE Corporation
LUDINGTON, MICHIGAN

**Just as simple
as A·B·C
The "THREE R's"
help you sell *all 3!***



WAGNER LOCKHEED BRAKE FLUID

An all-season fluid that functions perfectly under all atmospheric temperatures. Genuine Wagner Lockheed Brake Fluid is used by car and truck manufacturers and recommended for all hydraulic brakes.



WAGNER LOCKHEED HYDRAULIC BRAKE PARTS

Genuine Parts by Wagner—pioneer manufacturer of original Wagner Lockheed hydraulic brakes—assure perfect fit, dependable performance and customer satisfaction. Your customers know and accept Wagner's reputation for quality products.



WAGNER CoMaX BRAKE LINING

Designed, manufactured and thoroughly tested to insure more quick, safe, smooth stops per lining. Complete coverage for *all* your needs... in sets, rolls, blocks, slabs or cut segments. Available everywhere through Wagner wholesalers.

**You can depend on Wagner Quality because:
WAGNER PRODUCTS ARE USED AS ORIGINAL
EQUIPMENT BY AUTOMOBILE MANUFACTURERS**

Wagner Electric Corporation

6498 PLYMOUTH AVE., ST. LOUIS 14, MISSOURI



**LOCKHEED HYDRAULIC BRAKE PARTS and FLUID • NoRoL
CoMaX BRAKE LINING • AIR BRAKES • TACHOGRAPHS
ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES**

ASK FOR THE NEW BRAKE SERVICE WALL POSTER, FORM AU-354. FREE ON REQUEST.



The ONLY method that
Expands Worn Pistons
with Precision . . .
Instantly—Forever!
KOETHERIZING®

Fourteen years ago this revolutionary invention startled the industry . . . today it is still unequalled, unmatched, the ONE and ONLY process that expands pistons with precision . . . instantly . . . forever.

IT OPERATES IN SECONDS . . . resizes permanently . . . sets up an integral tension in the cold metal so that severe engine heat cannot cause piston to recollapse. Precisely expands both cast iron and aluminum pistons by peening the inside skirt with steel shot, hurled under controlled air pressure.

KOETHERIZED PISTONS BETTER THAN NEW . . . a Koetherized piston will never collapse again. It can be expanded to fit exactly in its own cylinder with tolerances of .0005". By Koetherizing worn pistons, you save your customer the cost of new ones. You can offer faster, better ring jobs or overhauls at half the cost of a rebore. Koetherizing makes ring jobs last longer . . . prevents piston slap . . . protects your work. It expands without adding weight or extra parts that could break and fall into the crankcase.

QUICK, EASY, ECONOMICAL . . . no heating, no complex machines, no guesswork or handwork with Koetherizing. Your Koppers

American Hammered Jobber can expand a set of pistons for you in less than 5 minutes . . . for less than a dollar per piston. He, alone, offers you this revolutionary piston expanding service, for Koetherizing is an exclusive, patented process. KOPPERS COMPANY, INC., PISTON RING DEPT., Baltimore 3, Maryland.

"Koetherizing helped me build my long list of satisfied regular customers."



"Koetherizing insures my ring jobs and overhauls against come back . . . guarantees my customers a better, longer-lasting job."



KOETHERIZING
 A Service of Your
KOPPERS
AMERICAN HAMMERED
DISTRIBUTOR

oil-squirt hole in the connecting rods to provide instant lubrication of the cylinder walls after a cold spark, (2) a new cylinder wall finish designed for better oil control, (3) on the V8 engine, a rubber seal ring on the intake valve stem guide to prevent excessive oil consumption due to leakage of oil past the valve guide.

A new three-bladed fan on the V8 engine replaced the former four-bladed fan at a reduction of fan speed to 9/10 of engine speed. It is said to provide the same cooling for the engine while giving more quiet operation. A newly-designed fan belt is being used, and the drive has been rearranged so that each belt drives only three pulleys.

An improved oil bath air cleaner with cork insulation is said to deaden metallic engine noises. Other new features of the 1950 Ford V8 engine include a hardened seat valve insert for exhaust valves; duplex water pump and series flow cooling, insuring against hot spots; an extra large capacity oil pump; and accessible vertical drive distributor incorporating full vacuum control on the ignition. Passenger comfort is said to be increased in the new models through the use of a new non-sag front seat spring, new sponge rubber front seat cushion, an improved front end suspension, additional head room, and increased areas of sound conditioning for quieter operation.

Safety factors include the strengthening of the body, new bumper guards, a ribbed rear bumper and bumper supports for added strength, an easier operating hand brake, wider sun visors, and improved steering linkage for easier control.

The doors are now equipped with a rotary lock, and the exterior handle has a touch-button latch.

Other styling features include a new hood ornament, restyled and repositioned parking lights, and a new ornamental deck lid handle. Another interesting point is that this will be the first Ford to come on the market with a crest, a coat-of-arms from 17th century England. This crest will appear on the front hood and center of trunk lid.

Among other features included are a new three-quarter horn ring, new gas filling tube and cover, a more rigid regulator for windows, a new double-walled glove compartment, and new automatic courtesy lights which go on when the front doors are open.

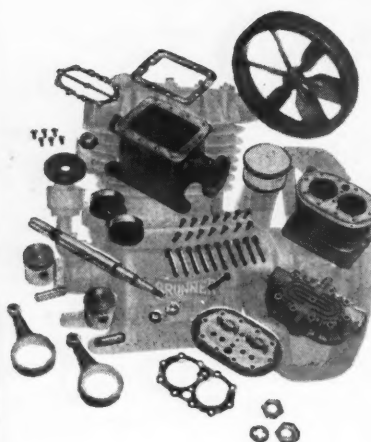


"Maybe you better do this, Jim, my wife doesn't seem to trust me..."

BRUNNER
SINCE 1906

AIR helps you serve better

Cast a Critical Eye on these Compressor parts!



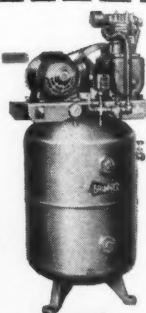
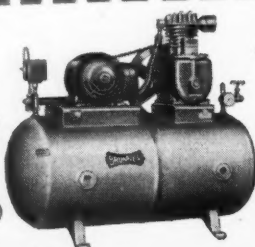
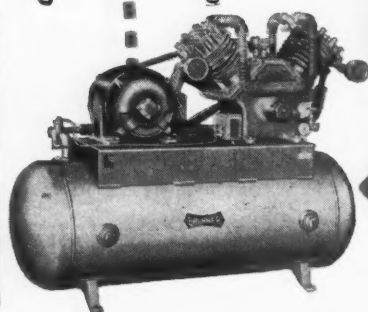
Here, actually, is the operating efficiency of an air compressor. The parts are few... assembly is relatively simple. It's what *you can't see* in these parts that is so vitally important in measuring the service worth of an air compressor...proven engineering, durability of metals and the watch-like precision of manufacture.

Before final selection of an air compressor, talk to a Brunner dealer. Ask for *evidence* of volumetric efficiency. Compare operating speeds. Get the *facts* on first cost, service life, dependability, operating economy. Make better use of air operated equipment...put Brunner Air Compressors on the job.

BRUNNER MANUFACTURING CO.
Utica 1, New York, U. S. A.

- Air power tools add to shop income. The Brunner Catalog suggests many applications and shows air required. Sent on request.

AIR COMPRESSORS
...a size and type for every purpose



BRUNNER
SINCE 1906

SINGLE STAGE 1/4 HP. TO 2 HP.
TWO STAGE 1 1/2 HP. TO 15 HP.

"Hello Snap-on!"



"Our Snap-on Service Tool Representative brings new tools with time-saving ideas to both our shop and our mechanics,"

**says John J. Gangloff, Service Manager,
City Lincoln-Mercury Co., Pasadena, Calif.**

... and John Gangloff adds this, "Snap-on tools have always been first with me because they are best. Add Snap-on service and you have an unbeatable combination. Snap-on tools are truly the choice of better mechanics!"

From coast to coast, reports from top Service Managers like John Gangloff, prove over and over again that Snap-on tools contribute to better workmanship, encourage speed and accuracy, and

promote happier service relations. Every call of the Snap-on field man helps keep tool kits up to par and cuts wasteful "tool-chasing" time.

Snap-on's direct-to-user tool service is available through 40 factory branches and almost 800 trained field representatives.

SNAP-ON TOOLS CORPORATION

8036-L 28TH AVENUE

KENOSHA, WISCONSIN

**For 29 years, Snap-on's Nation-wide
Tool Service has proved to be**

"The Time-Saving Way to buy Time-Saving Tools!"



Only \$2.98 helps put new "sell" in television advertising



Sponsor of television show had to refilm his commercials to meet a new selling problem. New films picked up at studio 4 P.M., delivered to TV station 800 miles away 8:47 P.M. same evening. Air Express cost for 11-lb. carton, \$2.98. (In undramatic fashion Air Express keeps radio, television or any business rolling.)



Remember, \$2.98 bought a complete service in Air Express. Rates include door-to-door service and receipt for shipment—plus the speed of the world's fastest shipping service.



Every Scheduled Airline carries Air Express. Frequent service—air speeds up to 5 miles a minute! Direct by air to 1300 cities; fastest air-rail to 22,000 off-airline offices. Use it regularly!

Only Air Express gives you all these advantages

Nationwide pick-up and delivery at no extra cost in principal towns, cities. One-carrier responsibility all the way; valuation coverage up to \$50 without extra charge. And shipments always keep moving.

Most experience. More than 25 million shipments handled by Air Express. Direct by air to 1300 cities, air-rail to 22,000 off-airline offices.

These advantages make Air Express your best air shipping buy. Specify and use it regularly. For fastest shipping action phone Air Express Division, Railway Express Agency. (Many low commodity rates in effect. Investigate.)

SPECIFY AIR EXPRESS



GETS THERE FIRST



Rates include special pick-up and delivery door to door in principal towns and cities



AIR EXPRESS, A SERVICE OF RAILWAY EXPRESS AGENCY AND THE SCHEDULED AIRLINES OF THE U.S.

1950 Mercury . . .

Continued from page 41

senger compartment to inside the engine compartment to allow more foot room for front seat passengers. Thirty per cent more heat is claimed for this unit by increasing the size of the heater blower motor.

New safety features incorporated in the 1950 Mercury include increased rigidity of the frame through increased gauge of steel where necessary, fifty per cent easier operating pull-type hand brake, increased ground clearance by changing from 3½ to 2½ inch gear shackles, and adoption of plastic lenses in parking lamps and tail lamps which are less apt to break.

New rotary type door locks are used, while pull-type door handles open the door with a push button below the handle. On the dash board, all the dials, including the radio dial, are placed behind a single clear plexiglas panel running the length of the control section. Below the instrument panel is a ribbed chrome section which contains the other control buttons, with the starter button and the light switch off to the left by themselves. The heater and air control have been made a part of the new instrument panel with the two vertically moving handles placed parallel and close together. Three positions of the air control permit the driver to supply the car with fresh air to send fresh air to the heater or to divert it through the windshield defroster there.



Car Dealers, Mechanics Rate FRAM First



Successful car dealer says...

“We're pleased to be a Fram retail outlet... are 100% behind it. We know the importance of an oil filter and sell Fram exclusively... with good turnover. Top on the pre-delivery service item list for new cars is a Fram Oil & Motor Cleaner.”



Automotive mechanic with 29 years' experience says...

“I've found Fram is the best oil cleaner and purifier to use on an automobile. It removes all sludge, dirt, grit and foreign matter... even removes moisture which always settles in the oil. Fram is high in quality and easy to install. I'd say it's the leading oil cleaner on the market.”

Famous FRAM Oil & Motor Cleaner "cleans the oil that cleans the motor," removes harmful dirt, dust, grit, sludge and abrasives from your oil. Outside-in flow assures greatest filtering area.



Fram's famous Filtron Cartridges remove harmful particles down to one micron (.000039 of an inch)... offer highest clean oil flow rate, maximum dirt capacity, longer cartridge life, lowest clean oil cost per mile. Exclusive non-abrasive filtering media won't remove additives from compounded oils. Sturdy metal casings prevent cartridge rupture.



Large sump area increases cartridge life... allowing heavy dirt, carbon, metal particles to settle to bottom of filter where they can be easily removed.



Now FRAM Offers Complete Engine Protection

Fram Complete Engine Protection with four great Fram Filters guards engines at every vital point. Extends engine life, prevents excessive wear, reduces breakdowns and repairs. Now the Fram Carburetor Air Filter, Gasoline Filter, Crankcase Air Filter prevent the entry of dirt, dust, grit, water and abrasives from the outside. The Fram famous Oil & Motor Cleaner removes damaging corrosives

formed on the inside. For stop-and-go drivers, the Fram Positive Crankcase Ventilator combines the Crankcase Air Filter with an electrically-driven blower to provide uniform, continuous crankcase ventilation and remove blow-by gases as they form. Only Fram offers you Complete Engine Protection. So for more profits, cash in now... with FRAM.

FRAM CORPORATION, Providence 16, R. I. In Canada: J. C. Adams Co., Ltd., Toronto, Ontario.

For Complete Engine Protection

FRAM



OIL - AIR - FUEL
FILTERS

1950 Hudson Continued from page 40

One of the features of this model is its six cylinder 112 hp. L-head engine. It has a bore of 3 9/16 in. and a stroke of 3 7/8 in. with a displacement of 232 cu. in. This compares with a displacement of 262 cu. in. in the six cylinder engine used in the 490 models. Standard compression ratio is 6.70 to 1. With

a high-compression aluminum head the compression ratio is 7.20 to 1.

Although manifolding and valve mechanism are the same as on the larger six, the carburetor is different, the new engine taking a single throat 1 1/4 in. Carter downdraft instead of the dual carburetor on the larger displacement engine.

Other detail changes have been made in accessory equipment. For one thing, they have adopted the Carter fuel pump for this model. The starting motor is of smaller size; and Hudson for the first time has adopted a shunt-wound generator, using an Auto-Lite Model GDZ 6001 B unit with maximum charging rate of 35-amp.

Because of reduced torque capacity the powerplant is fitted with a Hudson 9-in. diameter clutch.

Special transmission options on this model include overdrive in combination with the standard transmission; the well-known Hudson Drive-Master (HDM) automatic transmission without overdrive; and the Super-Matic Drive which is a combination package of Drive-Master with overdrive.

(Continued on page 106)



TESTED AND PROVEN BY MILLIONS OF CAR OWNERS

THE *National* LINE Of Quality Automotive Parts

Here is the fast selling, nationally advertised line with liberal profits for everyone in the trade. You can sell the National Line of Quality Automotive Parts with confidence because their quality and performance have been tested and proven by millions of car and truck owners. Unique features of National Parts & Assemblies prevent costly major repairs. Your customers' cars can be serviced faster because National Parts are easy to install.

National Parts & Assemblies are the products of sound engineering and precision manufacturing. They are rigidly inspected and guaranteed to be of finest quality materials and workmanship . . . their **QUALITY** assures long-life repairs at low owner cost.

QUALITY

- ★ Finest Materials
- ★ Precision Made
- ★ Rigidly Inspected

*"It's Better
If It's Made
by NATIONAL"*

FOR QUICK, LOW-COST REPAIRS

**Saves Buying a
New Drive Shaft**

•

**Repairs Worn Drive
Shaft & Seal**

•

**CAN BE INSTALLED
IN ONE HOUR**
Without Tearing
Down Differential

Pat. No. 2,403,520



DRIVE SHAFT BUSHING & SEAL ASSEMBLIES

Assembly drives over shaft flush with end of housing. New front bushing in assembly fits over the "U" joint. Sell with every transmission and "U" joint repair job.

- Provides Greater Bearing Surface.
- Eliminates Oil Leaks from Trans.
- Prevents Dilution of Differential Lubricant, Due to Trans. Oil Leak.
- Stops excessive Vibration and Whipping in Drive Shaft caused by Loose Bearing.
- Enables Repair to be made without Replacing Drive Shaft.

NOW 6 DIFFERENT BUSHINGS TO FIT ALL MODELS
For all Chevrolet Cars and Pickups, 1930 to 1949; Pontiac Cars 1933 to 1936; GMC 1934-36 Pickups; and most GMC Pickups, Models 1939 to 1949.



Pat. No. 2,405,541

DRIVE SHAFT HOUSING REPAIR UNIT K-400

Saves Buying New Drive Shaft Housing. Repairs worn drive shaft housing. Prevents damage to drive shaft, "U" joint etc. caused by wear. For Chev. Cars & Pick-Ups; Most GMC Pick-Ups.



**PART NO.
C-8-A**
PAT. APPLIED FOR

"UNIVERSAL" TRANSMISSION CASE BALL SEAT

Saves Cost of a New Transmission Case Assembly. Keeps ball housing in line with drive shaft housing. Chev. Master '29-'49 Cars; Pontiac, '35-'36; Chev. '29-'49 1/2 and 3/4 Ton Pick-Ups; Most GMC Pick-Ups.



UNIVERSAL JOINT BALL HOUSING KITS

Saves Buying a New Drive Shaft Housing. Repairs Worn Drive Shaft Housing. Stops excessive wear & vibration between drive shaft housing, ball housing & trans. case. Most Chev. Cars & Trucks, '29-'49; Most GMC Pick-Ups; Pont., '33-'36.

Please send me complete information about the National Line.

CLIP AND MAIL COUPON

Name MA-12

Address

City State

**Sold Nationally by Leading
Automotive Wholesalers.**

Write or wire
for full information



NATIONAL MACHINE WORKS, INC.

AUTOMOTIVE PARTS MANUFACTURERS

P. O. BOX 4305 OKLAHOMA CITY 9, OKLA.

NSPA Elects

Members of National Standard Parts Assn., in the twenty-sixth annual election of officers and directors which was held by mail this year, elected G. Walter Kleinschmit, an executive of The Automobile Equipment Co., Detroit, Mich., to the post of president for the coming year. He accepted the gavel and congratulations from retiring president, C. R. Crowder, vice-president and sales director of Van Norman Co., Springfield, Mass., at the board of directors' meeting held Nov. 12 at the Edgewater Beach Hotel, Chicago. Mr. Crowder becomes an ex-officio member of the board of directors for next year.

Also elected to the top posts of NSPA for the coming year are: Charles C. Tapscott, advertising manager for McQuay-Norris Manufacturing Co., St. Louis, Mo., who served as junior vice-president in 1949, to the office of senior vice-president; and Fred S. Roberts, vice-president and general manager of Phelps-Roberts Corp., Washington, D. C., to the office of junior vice-president and director. Prior to his election to this office, Mr. Roberts served as a director for NSPA in 1943, 1944, and 1945, as well as on various standing committees.



PACKARD

AUTOMOTIVE CABLE

*FOR ALL YOUR
WIRING NEEDS!*

PACKARD CABLE—

Tops for Every Requirement

LOW TENSION CABLE—The new and improved Packard low tension cable gives definitely superior performance . . . is tougher . . . lasts longer—at no increase in price.

HIGH TENSION CABLE—Packard's Four-Forty high tension cable is known throughout the industry for dependable performance on every make and model vehicle in every type of service.

BATTERY CABLES—Packard full-size battery cables assure fast cranking and quick starts, together with long life. They are available with your choice of the LeadAlloy terminal or the leaded brass terminal.

The best recommendation Packard cable could have is the fact that it is used as original equipment on more cars, trucks and buses than any other make. Packard cable is the standard for the automotive industry.

Packard's unique position as the leader in the original-equipment and replacement fields—now, as for many years past—is proof of quality . . . proof that Packard cable is a superior product.

Packard
REG. U.S. PAT. OFF.
TRADE MARK

Packard Electric Division, General Motors Corporation
Warren, Ohio

FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING

Antique Cars Continued from page 59

and keeping it so. Cost and upkeep must be lower than rental fees would be. Few of the cars have cost more than \$200, and most cost considerably less. All have paid for themselves several times over.

During World War II, countless old cars were contributed to scrap drives. There are not so many

around any more. The insurance on Twentieth's collection, \$250,000, represents replacement value.

Old cars are used in movie scenes primarily to establish the "atmosphere" of a definite period. For this reason, they must be as authentic as possible. And they must actually run to be completely convincing. Moreover, to cut

down delays in production, they must run when the director wants them to run. This was one great fault of the old cars the studio used to rent. The owners couldn't afford to keep them in good repair, and they were constantly breaking down at inconvenient times. Ruman's "antiques," however, are kept in top shape by two expert mechanics.

Automobile fans are always writing to the studio questioning the authenticity of some ancient car or automotive device. But they're usually wrong, for the studio gets its data from its extensive research library. In "Wilson," for example, one limousine had automatic windshield wipers. "That's a boner," yipped a number of fans. But it wasn't. The scene involved was supposed to be 1916, and Ruman was able to prove that such windshield wipers first appeared in 1914.

The cars have been modernized mechanically in only one respect: electric lights burn in the old lamps. Self-starters have not been added.

In film scenes, the cars are usually driven by professional studio drivers. There are about twenty-five capable of handling the cars with the care due their venerable years. When a star is required to drive one of them, Ruman insists that the star have driving lessons first—"just like a beginner."

Credit Eased

Automobile financing on credit terms considerably easier than those in vogue at anytime in the postwar period are beginning to appear in Detroit. For example, DeSoto dealers are advertising delivery of a four-door sedan for as little as \$436.50 down, exclusive of sales tax and license. An added inducement is bank rate interest on the balance. The down payment represents about 25 per cent in comparison with the usual one-third down. One dealer explains that the low down payment and extended monthly installments up to 30 months on the balance is given only to extremely sound credit risks. The above deal also applies only to the cheapest line and to the basic car.



BURD

"Super Hi-Speed"

OIL RING

Sure Way to Oil Control

Do you duck the question every good mechanic should be able to answer positively: "Can you *guarantee* oil control?" It's an easy one for the man that recommends and installs Burd "Super Hi-Speed" Oil Rings. The greater flexibility of the Burd cast iron ring permits uniform contact with the entire cylinder wall surface, even in cases of extreme wear. Additional wiping action, *without excessive pressure*, is assured by the smooth-acting steel segments installed *below* the cast ring. Burd "Super Hi-Speed" Oil Rings cut down on overhaul costs, restore new-car efficiency, making you a friend of the price-conscious car owner. Burd "Super Hi-Speed" Oil Rings are available in "Engineered for Results" combination sets for all cars, trucks, buses, tractors and industrial engines. See your Burd jobber today!

BURD PISTON RING CO.
ROCKFORD, ILL.



BURD
AUTOMOTIVE
PRODUCTS



PISTON RINGS



PISTON SKIRT EXPANDERS



VALVE PACKING



VALVE GUIDES



NoDex
HOT WATER CAR HEATERS

106

MOTOR AGE, December, 1949

NEW!

Exide Sure-Start CHARGER-TESTER

with Thermostatic Control

**A high quality 100-ampere
fast charger and battery
tester at a new low price**

Increase your sales . . . of recharges . . . of new batteries . . . with this compact, mobile unit. It gives a maximum fast charge with safety . . . or a slow charge. And it has a built-in CAPACITY TESTER.

Simple to operate. Turn on the charger and set the rate at 100 amperes; thermostat turns charger off automatically when battery has received the maximum safe charge. To make capacity test press button and read results on large master scale.

MODEL EX-201—115V 60 Cycle AC

Dealer Price

\$159⁵⁰

Available on Exide Time-payment Plan



EXIDE PORTABLE FAST CHARGER with Thermostatic Control — A 100-Ampere Fast Charger at a New Low Price

Here's a small, compact, easy to handle unit that does a full-size job.

It's a three-purpose charger . . .

1. A fast charger, for maximum safe recharging
2. A slow charger
3. A safe battery booster and car starter

**MODEL EX-400
115V 60 Cycle AC**

Dealer Price

\$114⁵⁰

Available on Exide Time-payment Plan

GET IN TOUCH WITH THE EXIDE DISTRIBUTOR

"Exide" Reg. Trade-mark U.S. Pat. Off.

1888...DEPENDABLE BATTERIES FOR 61 YEARS...1949

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto

MOTOR AGE, December, 1949

1950 Pontiac Continued from page 38

pression ratio head is offered as optional on both the six and eight, making mandatory the use of premium fuels.

The change on the eight has been accomplished without changing either cylinder centers or stroke. However, diameter of the rear bearing has been increased and with it Pontiac has adopted a posi-

tive type oil seal, the construction being similar to that on the six and interchangeable with it. Another change, important from the service standpoint, is the adoption of internal type valve spring dampers on the eight only. This was done because there was no longer space to accommodate the external dampers used heretofore.

To compensate for increased output of the eight, clutch diameter has been increased to 10-in. from the former 9½-in. size.

The increased horsepower and torque of the eight-cylinder engine has made it possible to run the engine at lower speed and permits use of a lower reduction—3.9 to 1—rear axle ratio. This combination is expected to improve performance and fuel economy as well. The rear axle ratio with Hydra-Matic remains at 3.63 to 1. Standard rear axle ratio on the sixes remains at 4.1 to 1.

On the sixes, radiator capacity has been increased by adding more copper to the core.

A welcome change for mechanics is the provision of an access door on the inside panel of the right front fender, affording easy access for tappet adjustment. For this operation it is necessary to remove the right front wheel as well as the access panel.

An important innovation in the electrical system is found in the
(Continued on page 111)



* 國 際 工 具 *

"MAN WHO BUY NATIONAL GARAGE TOOLS PLENTY SHARP"

"Yes sir, in any man's language -- the man who buys NATIONAL garage tools is plenty sharp!" . . . because NATIONAL hand tools are special tools, "tough tools" for special jobs, designed and manufactured by men who know the many perplexing problems of the mechanic.

We at NATIONAL are glad to see automotive men the country over appreciating the value and high quality of NATIONAL tools. This acceptance by the men who know good tools caused our recent move to new and larger quarters, where excellent facilities for increased production will enable us to make available even better tools and quicker service to our customers.

For more information on this profitable line of specialized tools write or wire directly to factory.

National
GARAGE TOOLS

National Machine & Tool Co., Inc.
JACKSON, MICHIGAN, U. S. A.

Kaiser Charges Plot

There has been no official reaction from automobile company executives to the recent blast by Henry J. Kaiser, Kaiser-Frazer board chairman, that there is a plot afoot to stop K-F from producing a low-priced automobile. Following a request from Senator Fulbright (D., Ark) for delay of a \$44.4 million RFC loan to K-F until a Congressional investigation could be made, Mr. Kaiser issued a statement saying that "a plot to stop Kaiser-Frazer from producing the low-priced car for which Americans have been clamoring for years is at last out in the open, but stool pigeons or unwitting stooges for the interests who want to stop the K-F challenges to the Big Three's lowest-priced cars won't stop us." He pointed out further that Kaiser interests have returned to the government more than \$188 million on operations of former war plants and that conditions imposed on K-F for the latest two loans are the stiffest ever imposed by RFC upon a borrower.

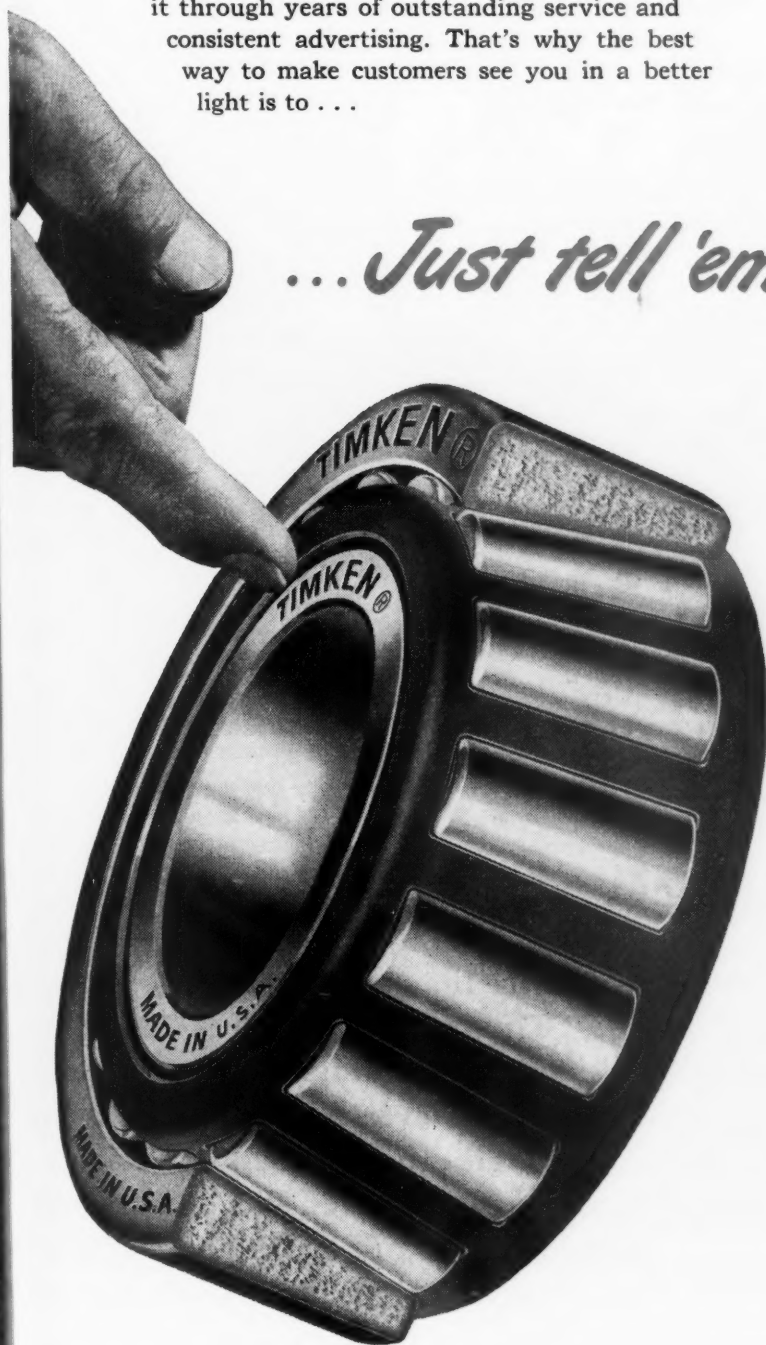
How to help customers see you in a better light

YOU can bask in the light of a reputation for quality when you tell customers you're installing Timken® tapered roller bearings.

Customers know that Timken bearings are the finest you can give them. They've learned it through years of outstanding service and consistent advertising. That's why the best way to make customers see you in a better light is to . . .



... Just tell 'em it's "TIMKEN"®









Timken bearings are first choice with leading automobile, bus and truck manufacturers—wherever the loads are tough. They take any combination of radial and thrust loads, eliminate friction, reduce wear and keep parts in rigid alignment. Normally they last the life of the vehicle itself!

Because every step in the manufacture of Timken bearings is completely controlled by the Timken Company—from melting the fine alloy steel to final inspection of the bearings—consistent high quality is assured.

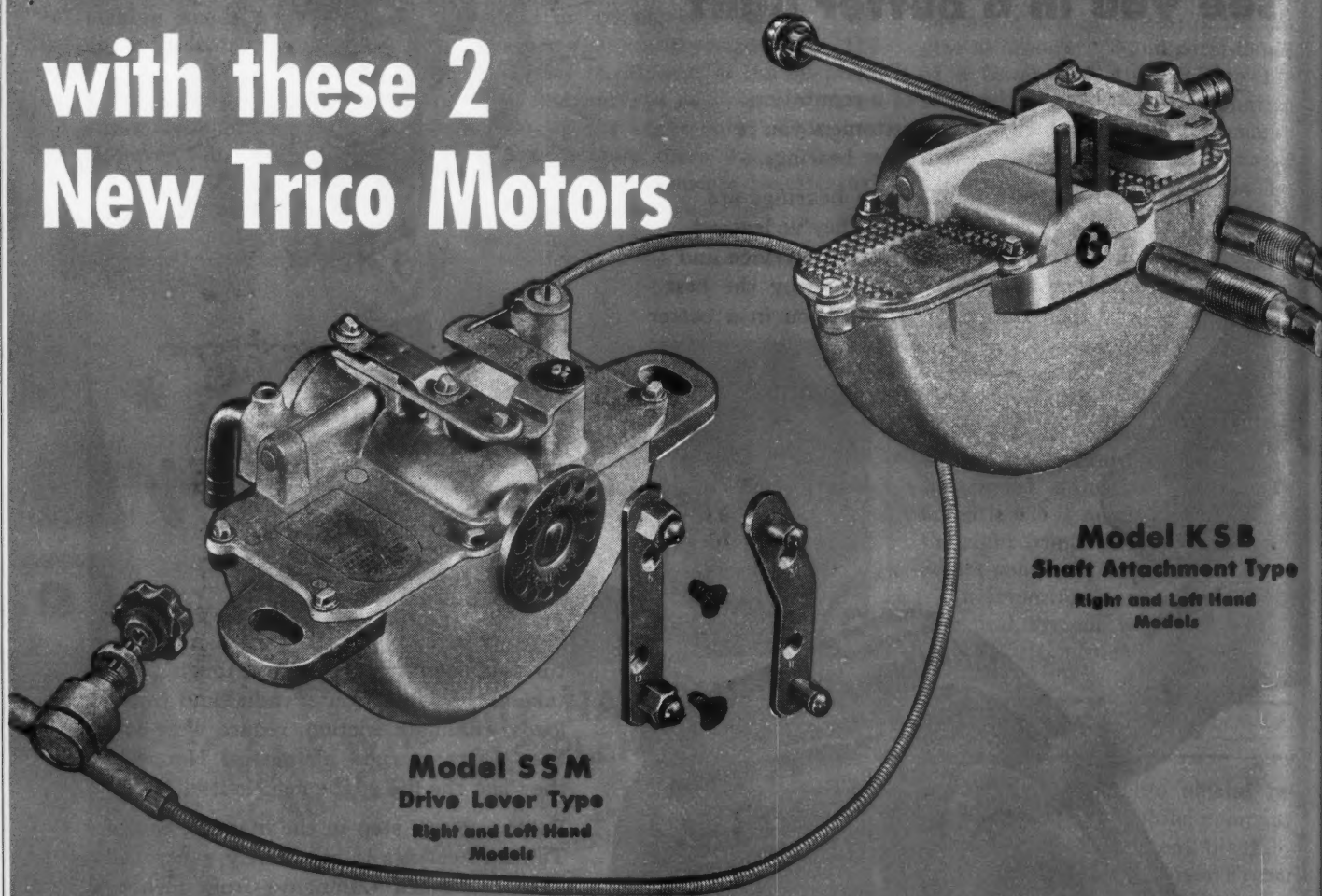
To build your reputation for high quality service, use only the best in bearings. Look for the trade-mark "Timken" stamped on every tapered roller bearing you install. **SEND FOR FREE BOOKLET:** *Timken Tapered Roller Bearings, Their Care and Maintenance*. Contains 20 pages of practical tips for mechanics, garage men and fleet operators. Write Dept. AM-12, The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

TIMKEN
TRADE MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS

NOT JUST A BALL  NOT JUST A ROLLER  THE TIMKEN TAPERED ROLLER  BEARING TAKES RADIAL  AND THRUST  LOADS OR ANY COMBINATION 

Match 500 Motors

with these 2
New Trico Motors



**...they fit millions of cars
dating back to 1932**

To enable dealers everywhere to service the tens of millions of Trico-equipped cars now approaching "old age," Trico has developed these two new Universal-Interchangeable Windshield Wiper Motors.

With them...plus a kit of assorted shafts and drive levers...you can match over 500 Motor models dating back to 1932, all originally built by Trico.

Trico Wholesalers carry complete stocks of replacement Linkages, Blades and Arms and will also continue to supply replacement Motors in original equipment styles.

Ask your Wholesaler to show you the Universal-Interchangeable initial stock assortment

TRICO PRODUCTS CORPORATION, BUFFALO 3, N. Y.



WINDSHIELD WIPERS

Copyright 1949, Trico Products Corporation, Buffalo, N. Y.

1950 Pontiac . . .

Continued from page 108

adoption of a new type of ignition cable on all models. It consists of a unique carbonized fiber core with a Neoprene jacket, the conducting core replacing the usual copper cable. It is of interest that this cable has the properties of a resistor and thus provides the equivalent of a complete resistor installation at each terminal. This is said to meet adequately the requirements of radio and television interference suppression. At the same time, this eliminates the distributor cap resistors used last year.

A change in the rear suspension system is found in the adoption of rubber spring bushings to replace the threaded bushings used before. This eliminates the need for lubrication and is said to give a longer lived and quieter job. At the same time the rubber bushings serve as insulators between the running gear and chassis, thus eliminating insulators at the axle.

Indiana ADA

The Automobile Dealers' Association of Indiana, Inc., recently sponsored Sales Clinics at ten Regional Meetings throughout the State.

Approximately 921 dealers and 1400 of their personnel attended these meetings. No previous meetings have ever met with such outstanding success and enthusiastic reception.

Mr. George A. Saas of the George A. Saas Sales Promotion and Advertising Agency of Indianapolis conducted the Clinics. A printed resume of his talk was distributed following each meeting.

Joseph E. O'Daniel of Evansville, president; Haywood M. Davis of Fort Wayne, vice-president; Wm. R. Krafft of Indianapolis, treasurer; Herman Schaefer of Indianapolis, executive secretary of the association, and Frederick M. Sutter of Columbus, Indiana director to the national association, addressed the dealers on current topics during the afternoon sessions.

To Sell 'Em... Show 'Em!



The new BOWES display rack really sells battery cables! Bring your BOWES *Corrodeless Terminal* Battery Cables out in front—let your customers see them—you'll be amazed at your sales increase!

BOWES Corrodeless Terminal BATTERY CABLES

● Do you realize that *every other car* that drives into your place needs new battery cables? The driver doesn't know it—till trouble starts. While you've got his hood up, inspect his cables. It's a simple matter to show him he needs replacement . . . and then to replace with BOWES *Corrodeless Terminal* Battery Cables.

And it's doubly easy if your battery cable display is right where he can see it. Any motorist will more readily buy a displayed article than one dragged out of the back of the shop. Those battery cable profits are too big and too easy for you to let them slide. Ask your Bowes "Seal Fast" Distributor about the new display rack. Now is the time to cash in on the sale of BOWES *Corrodeless Terminal* Battery Cables, which simply can't corrode and which insure quick cold-weather starting.

★ Here's your complete sales story in small space! Ask to see the new all-metal BOWES Cable Merchandiser. It makes 'em ask for cable inspection!



BOWES "SEAL FAST" CORPORATION, INDIANAPOLIS 7, INDIANA

Kester Flux-Core Solder

...The Mechanic's SILENT PARTNER



Good mechanics know that

Kester Acid-Core Solder will do those numerous repair jobs faster and better. Kester Solder, in 1, 5 and 20-lb. spools, is the most important item in your shop. Insist upon KESTER ACID-CORE SOLDER from your jobber... the mechanic's standard for over half a century.



METAL MENDER AND RADIO SOLDER AVAILABLE IN HANDY "TOOL KIT" PACKAGE

A convenient size for those "away from the shop" jobs, or as a quick turn-over resale item that sells on sight (25c in most areas). Packed ten boxes to a display carton.

KESTER SOLDER COMPANY

4201 Wrightwood Avenue Chicago 39, Illinois
Factories also at Newark, New Jersey • Brantford, Canada



**KESTER
SOLDER**

New Products

Continued from page 62

(For further information use coupon on p. 61)

488—Diagonal Pliers

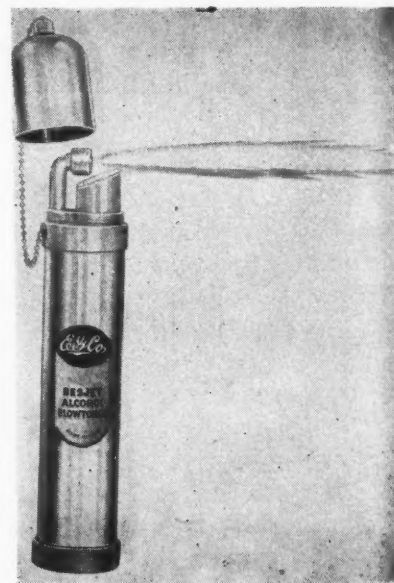
Addition of two more PROTO pliers, diagonal and wrench types, has been announced by the Plomb Tool Company, Los Angeles, Calif.

The new 7 in. diagonal plier, No. 207, has 1½ in. cutting edges, and has a narrow head to provide good clearance. The matched cutting edges are induction hardened, and the joints are said to be closely fitted to prevent wear from looseness.

The wrench plier, No. 239, is an 8 in. general utility, slip-joint plier with three jaw-opening adjustments.

489—Blow Torch

The Emil Greiner Company, N. Y. C., New York, has introduced the "Besjet" blow torch. Weighing 10 ounces and measuring 7¼ inches, tall, the "Besjet" is completely automatic, and according to the manufacturer, it will give



a six-inch flame of 1800 degrees F. in 10 seconds. One filling of alcohol will operate the torch approximately 1½ hours.

490—Aluminum Wrench

J. H. Williams and Co., Buffalo, N. Y., is manufacturing aluminum pipe wrenches, fully drop-forged from special high tensile aluminum alloy.

(Continued on page 114)


SKIL Drills

Speed Up Major Overhauls!


Fast-working SKIL Drills and accessories...
make bigger profits on the big jobs!

SKIL Drills can be your answer to making money on major engine repairs. SKIL Drills have the extra power, the extra speed under load that makes tough drilling fast and easy. With specially designed SKIL Attachments they're ready in seconds to clean valve guides, hone cylinders, remove carbon, spot holes and do a hundred other jobs.

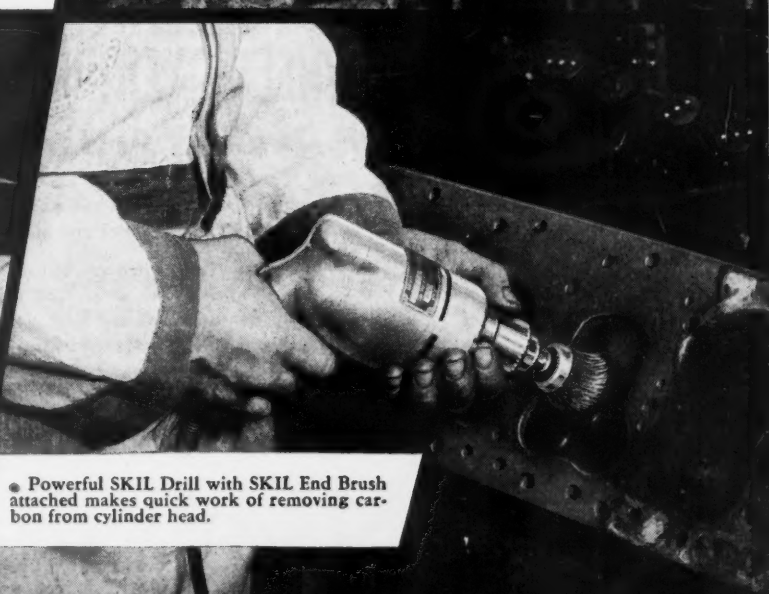
Standardize on light, compact, fast-drilling, easy-handling SKIL Drills. 26 powerful models to choose from. So ask your SKIL Tools Jobber to recommend the perfect SKIL Drill for your tough drilling problems.



● Cleaning valve guides with SKIL Drill and SKIL Valve Guide Brush means a fast, easy, thorough job.



● Drilling out broken stud in a tight spot is a natural for this compact SKIL Drill.



● Powerful SKIL Drill with SKIL End Brush attached makes quick work of removing carbon from cylinder head.

SKILSAW, INC.

5033 Elston Avenue, Chicago 30, Illinois
Factory Branches in Principal Cities

In Canada: SKILTOOLS, LTD., 66 Portland St., Toronto, Ont.
SKIL Tools are made only by SKILSAW, INC.

SKIL ELECTRIC
Tools
PNEUMATIC

New Products Continued from page 112

(For further information use coupon on p. 61)

Their strength and long-wearing qualities are said to be comparable with heavier iron or steel wrenches. Weight has been reduced nearly 50%, with the result of greater handling ease and less worker fatigue.

Replaceable alloy steel jaw inserts are interchangeable. The same insert fits handle or movable

jaw. Multiple dove-tail design and retaining screw assure easy assembly and firm anchorage.

491—Fast Charger

Fox Products Company, Philadelphia, Pa., announces that fast-charging a battery can be reduced by as much as one hour with the

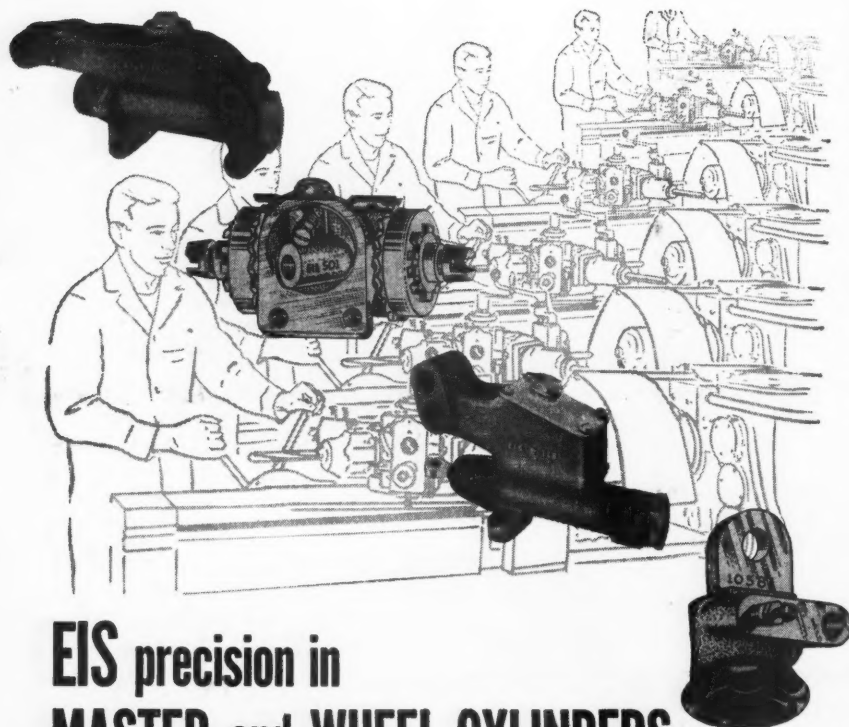
use of their new Fox Powercharger. It is also claimed that batteries cannot be damaged by excessive heat because the fast charger will operate only when the temperature detector is in the battery, thus safeguarding it. This new charger is said to fully charge good batteries by automatically cutting off at a temperature corresponding to a full charge. A variable temperature control, called Compensated Cut-off, is said to insure a safe full charge in the shortest time with a minimum of overcharging. According to the manufacturer, if clamps are reversed on the battery, if charging current is too high, or if a short circuit occurs, the charger automatically cuts off and a red light flashes the operator.

492—Air Compressor

Special application of the Champion gasoline-powered air compressors which give field mobility to compressor service is being introduced by Champion Pneumatic Machinery Company of Chicago, Ill. The Champion "Minimized Vibration" feature which it is said reduces vibration by controlling RPM to under 600, makes the Champion compressor suitable for installation in service trucks.

493—Fender Ornament

A rear-fender ornament for the '49 Pontiac has recently been placed on the market by Denton Hassell, Ferndale, Mich. The ornament is die-cast and is 18 inches in



EIS precision in MASTER and WHEEL CYLINDERS

assures "S-TOP Quality" Performance!

Each Master and Wheel Cylinder requires scores of individual operations. These are performed right in our own plant . . . on the most modern precision equipment.

Careful inspection between operations,

and in final assembly, guarantees their precision and ease of installation.

Thus, when you sell or install EIS cylinders, you do so with full confidence in their performance . . . that they will more than meet the great safety responsibility invested in their function!



See your jobber
or
write us direct

EIS AUTOMOTIVE CORP.
Middletown, Conn.



length. It is triple chrome-plated, and has a one-inch red reflector jewel at the lower end. When installed it extends from the stop-light well up over the top of the fender so that it is visible from the side and rear of the car.

**SELL
THE
FILTER
THAT'S
DIFFERENT**

DUREX

GASOLINE FILTER

A fuel filter is only as good as its filtering element. That's why the Durex Filter uses an element that is *surpassingly* good—the only all-metal element in use today. It's made of bronze—myriads of bronze spheres bonded together—spheres so tiny that no particle of dirt can work its way through the still tinier passages between.

Only Durex Filters Offer All These Features

POSITIVE PROTECTION—The Durex porous metal filtering element passes nothing but clean fuel, keeps water and particles of lint, dust and scale from reaching the carburetor.

QUICK INSTALLATION—The Durex unit fits readily into the fuel-feed line of cars, trucks and buses.

EASY MAINTENANCE—The Durex metallic filter element never needs replacement; it's a matter of a few minutes to remove it and flush it clean.

LOW COST—Its price is low . . . its first cost is the last cost . . . it quickly pays for itself, then earns dividends in improved performance.

Stock and display Durex Gasoline Filters—the big seller in a big market. Place your order now for this profitable accessory.



Durex Gasoline Filters are distributed nationally by United Motors Service. Order a supply from your local distributor.

MORaine PRODUCTS

DIVISION OF GENERAL MOTORS
CORPORATION, DAYTON, OHIO



Design-CRAFTSMANSHIP-SERVICE

are the "Big 3" of Quality performance. And **ONLY** with Sure-Fit Auto Seat Covers can you be sure that you are creating maximum sales and good will—now and for the future—because **only** Sure-Fit gives you seat covers with the outstanding performance assured by the right combination of:

DESIGN

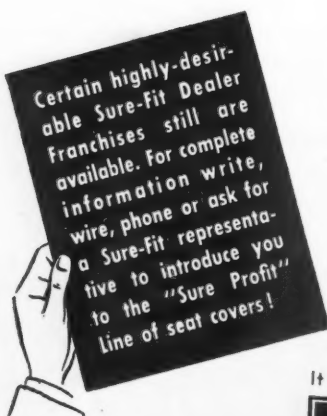
from exclusive styling to smooth, permanent fit.

CRAFTSMANSHIP

latest techniques that mean long wear, neatness, simplified installation, reduction in seam wear and greater comfort for user.

SERVICE

and satisfaction established by the fact that more Howard Zink seat covers have been produced than any other brand.



It Pays to be Associated with the Leader

THE HOWARD ZINK CORP.
FREMONT, OHIO
PASSAIC, N. J. • LONG BEACH, CALIF.
World's Largest Manufacturer of Fabric Auto Accessories

Personals . .

George L. Brunner, 66, who organized the Brunner Manufacturing Company, of Utica, N. Y., died recently after a two-year illness. Mr. Brunner was instrumental in the development of the air compressor, and his company is said to be the oldest of its kind. Survivors include his wife, and his son who is now associated with the company.

Francis James Hood, president of Ansul Chemical Company, died suddenly November 10 while on a business trip in New York City. He was 44 years old and had apparently been in good health.

Hood was elected to the presidency of his company less than a year and a half ago. Before that, he had served as vice-president, secretary-treasurer and originally, California representative.

Jesse E. Dowley, President and General Manager of the Cal-Van Machine Products Inc., Jackson, Michigan, died suddenly at his home, Wednesday, November 9, 1949, of a heart attack. He was 65.

The firm will continue operations under the leadership of his wife, two sons, and two long time associates.

Rex Mays

On November 7th at the Delmar Race Track, Delmar, California, Rex Mays was killed when his car hit a chuck hole, throwing him out on the track under the wheels of another car. One of the few drivers never to use a safety belt. "Rapid Rex" was one of the nation's leading race drivers at the age of 36, and popular for his skillful driving. In the 1949 Indianapolis 500 mile race, Rex Mays had taken fifth place in the Wolf Special, which was the car he was driving on November 7th. In 1940 and 1941 he had finished second at the Indianapolis race although he had never won.

Mays was married, with two children.

REASONS WHY DEALERS PREFER TO SELL . . .

GOULD batteries

REASON NO. 1 } *Service*



TWELVE strategically located manufacturing plants — for fast delivery everywhere.

That's why Gould Battery Service is the talk of the industry.

You get batteries when you need them — when you can sell them.

Watch for Reason No. 2 in an early issue.



GOULD STORAGE BATTERY CORP.
SAINT PAUL 1, MINNESOTA

— FACTORIES: —

Atlanta
Chicago
Dallas

Leavenworth
Los Angeles
Lynchburg

Marlboro
Memphis
North Bergen

St. Paul
West Salem
Zanesville

When in DETROIT

—make this "Goodwill Hotel" your headquarters. Centrally located overlooking Grand Circus Park . . . 500 rooms, each with tub and shower, chairside radio, television. Good food, ample parking space, garage service also available . . . Home of THE TROPICS, most unusual night spot in Detroit.

HOTEL WOLVERINE

"The Goodwill Hotel"

Elizabeth Street—Block East of Woodward

RATES FROM \$2.75 SINGLE • \$5.00 DOUBLE

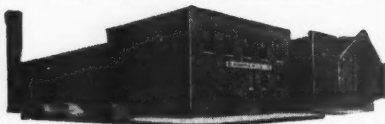


IF THAT'S HOW YOU USE YOUR
FIRE TRUCKS, BETTER LINE 'EM WITH
SOUTHERN FIBER BLOCK



SOUTHERN
FRICTION MATERIALS CO.-CHARLOTTE, N.C.

The Plant Behind AMKO PRODUCTS!



Shown above is our main plant and warehouse at 556-570 W. Fulton St., Chicago 6, Ill., and in addition we have our Foundry and Machine Shop at Plano, Illinois.

Every AMKO PRODUCT is Carefully Engineered and Accurately Machined to Original Equipment Specifications

For All Popular Cars and Trucks
We Can Furnish the Following:

- KING BOLT SETS
- UNIVERSAL JOINTS
- FRONT END SPRING
- TIE ROD ENDS
- SUSPENSION PARTS
- RUBBER BUSHINGS
- WATER PUMPS & KITS
- SPRING SHACKLE SETS

We Also MANUFACTURE Original Equipment Replacements for ARMY & CIVILIAN JEeps



Automotive Man'g Co. Inc.
General Offices and Warehouse
570 W. FULTON ST. CHICAGO 6, ILL.

Personals . . .

Continued from page 116

Peter M. Heldt, long time engineering contributor and former engineering editor of Automotive Industries, was among five "Old Timers" to receive formal citation by the Automobile Old Timers in New York City, Oct. 18.

Mr. Heldt was acclaimed for his contributions to automotive engineering and received joint recognition with K. T. Keller, Chrysler President; Harvey Firestone, Jr., Chairman, Firestone Tire & Rubber Co.; Wm. E. Holler, formerly General Sales Manager of GM's Chevrolet Motor Div., and Alfred Reeves, advisory Vice-President of the Automobile Manufacturers Association.

Guy B. Cornwell has been appointed sales manager for Yankee Metal Products Corporation. He has been in the accessory field for over twenty-three years.

Marvin J. Alef has been appointed Executive Vice-President of Saginaw Industries Company, Saginaw, Michigan. Mr. Alef disclosed that the company will augment its production with new products along the expanded grille line.

You Can Rely On FRENCHTOWN INSULATORS

Used by more spark plug manufacturers than any other.

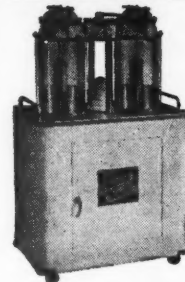
FRENCHTOWN PORCELAIN COMPANY
81 Muirhead Ave., Trenton, N. J.
(Factory: Frenchtown, N. J.)

THE ANDREWS LINE . . .

Your Best Electrical Connection

CUSTOMER SATISFACTION SINCE 1921

Andrews
MANUFACTURING CO.
ST. LOUIS, MO.



For More and Bigger

COOLING SYSTEM
SERVICE PROFITS

CHOLDUN
PRESSURE
PURGER

Write for full
information today

CHOLDUN MANUFACTURING CORP.
11 West 42nd Street
New York 18, N. Y.

HAVE YOU SEEN THIS NEW K-D IGNITION KIT?

With #120 Kit you can make almost any ignition adjustment on all systems. Pocket size plastic kit, size 4 15/16" x 4 5/8". Ask your jobber.



K-D TOOLS • Lancaster, Pa.



THE VAN LINE COMPLETE REBUILDING SERVICE

Mr. Jobber: Stock the VAN line. Best quality, attractive package. Shock Absorbers, Starter Drives, Distributors, Generators, Carburetors, Wiper Motors, Fuel Pumps, Brake Cylinders.

Mr. Service Man: Insist on VAN quality. Ask your jobber. If he can't supply, order direct, giving his name.

VAN BERGEN & GREENER, INC.
1619 N. Heyne Ave., Chicago 47, Ill.

680 9th St. N.W. ATLANTA 2727 Oak St. KANSAS CITY 2306 N. 15th St. PHILADELPHIA

DOR-TITE

STOPS

SQUEAKS, RATTLES, DUST
and DRAFTS IN OLD or NEW
CARS. 1000 OTHER USES.



THE ORIGINAL SPONGE-
RUBBER STRIP WITH
PATENTED NO-STRETCH
FABRIC BACK.

DURKEE-ATWOOD CO.
★ ★ Minneapolis 13, Minnesota ★ ★

Keeps Engines Safe in the

DANGER ZONE

OIL CHANGE
TIME

VALVOLINE MOTOR OIL

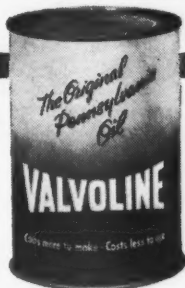
Many motor oils fail in the *Danger Zone*—that last few hundred miles before the drain period. This is when weaker oils thin out—lose their cleaning action—expose the engine to damage from heat, friction, corrosion.

The reason: Some motor oils use additives as a crutch, in an attempt to overcome natural weaknesses in the oils themselves.

VALVOLINE's protective qualities are in the oil itself—in natural, durable form that stands up under punishment. For double protection, additive is used—to guard against *outside* contamination.

Sell Your Customers FOR GOOD—with VALVOLINE's 6-Point Proof of Quality

1. Made from world's finest crude—100% Pennsylvania.
2. Selective Extraction removes the few impurities—leaves *all* the natural lubricating factors in the finished oil.
3. Cleanest type oil known. Additives protect against *outside* contamination.
4. Highest Viscosity Index—best protection against thinning at engine temperatures.
5. Passes every test with honors—in the laboratory—on trial runs—in actual use.
6. World's longest record of customer satisfaction—America's first Pennsylvania Oil.



Send For Booklet "Evaluation of Valvoline"

It tells in detail why you can win friends and build bigger, steadier profits by becoming an authorized Valvoline dealer.

100% Pennsylvania Oil

FREEDOM-VALVOLINE OIL COMPANY

Freedom, Pennsylvania

C.T.I. TRAINED MEN ARE AVAILABLE!

Each month C.T.I. graduates ambitious young men who have completed an intensive course in Automotive Mechanics and Body-Fender Repair. Their training has been practical. They've learned by working on modern equipment under personal expert supervision. If you need a trained man, we invite you to write for an outline of our course, and for a prospectus of the graduate. (No fees, of course.)

Address
Placement Manager, Dept. P102-12
COMMERCIAL TRADES INSTITUTE
1400 GREENLEAF CHICAGO 26

See your
MANLEY
DISTRIBUTOR
FOR
AUTOMOTIVE
SERVICE
EQUIPMENT

COLE-HERSEE for QUALITY
COLE-HERSEE for PERFORMANCE
COLE-HERSEE for DEPENDABILITY

COLE-HERSEE
for America's Finest
Original Replacement Switches

Write for Complete Catalog
COLE-HERSEE CO.
20 Old Colony Ave., Boston 27, Mass.

When you call for
DURO CHROME
you're sure of getting



Doggone Good Tools!

DURO METAL PRODUCTS CO.
2649 N. Kildare Ave., Chicago 32, Ill.

Also Makers of DURO Machine Tools

Highest in Comfort!

THE NEW!
ARVIN
Duo-Flt
CAR HEATERS

Lowest in Cost!

New Literature

C-79—The Roberk Co., Norwalk, Connecticut. A Sales Brochure describing the features of Roberk mirrors. Free.

C-80 — Harley-Davidson Motor Co., Milwaukee, Wisconsin. A 32-page Harley-Davidson motorcycle accessory catalog. Free.

C-81—The Motor and Equipment Wholesalers Association, Chicago, Ill., has announced a booklet entitled "Cost Of Doing Business In The Automotive Wholesaling Business."

This booklet covers a survey and study of the cost of doing business in the automotive wholesaling industry which was made to establish a Standard Of Performance with which automotive wholesalers might compare their own operations.

To make possible a closer comparison of performance ratios, wholesalers have been classified according to volume into five groups.

This booklet provides an effective means for automotive wholesalers to analyze their own company's operations by comparing their own operating figures with ratios given in this report.

WOLF'S HEAD
IS 3 STEPS AHEAD

WOLF'S HEAD
MOTOR OIL AND LUBES

100% PURE PENNSYLVANIA
Member,
Penna. Grade Crude Oil
Association



For Faster
Better
Easier
IMPERIAL Tube Flaring

Flaring Tool with quick slip-on yoke
A favorite with service men! Makes proper 45° flares on copper tubing for tight SAE flare joints.
No. 193-F flares 3/16", 1/4", 5/16", 3/8", 7/16", 1/2" O.D. Tubing.
Order From Your Jobber.

THE IMPERIAL BRASS MFG. CO., Chicago 7, Illinois

ALLOY PISTONS



If they're
HARD TO GET
We've Got 'em!

To Fit Every Car in America

Write for Catalog
TSUNGANI PISTON CO.
625 East 11th St., Tacoma, Wash.

PUROLATOR

Micronic
OIL FILTER



Filters more abrasives... faster!

Genuine SERVICE
INDIANAPOLIS
"Measurably Better"
SPRINGS



SERVICE SPRING COMPANY
INDIANAPOLIS 6, INDIANA

LUBAID

FOR BREAKING IN NEW
AND REBUILT MOTORS

Not a tune-up oil!

IT'S LUBAID... for
reduced friction and
wear... protection
against seizure and scoring... longer
engine life.



LUBAID CO., Milwaukee 1, Wis.

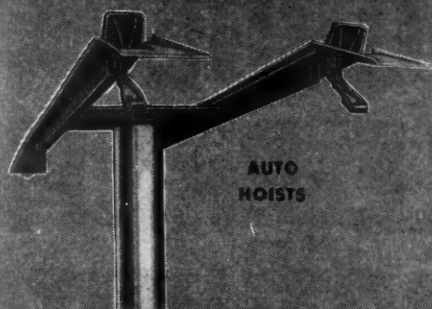
MARK of QUALITY!

Whether they are the Original Equipment Valves on the tubes you sell and service or... whether you use them as Replacement Valves in your tire repair business, the Schrader Trade Mark on any Tire Valve you work with is a Guarantee of Quality!



A. SCHRADER'S SON - Brooklyn 17, New York
Division of Scovill Manufacturing Company, Incorporated

WAYNE'S *complete line*



AUTO
HOISTS

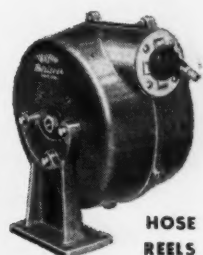
WAYNE OFFERS a wide line of automotive service equipment, Computing Gasoline Pumps, Air Compressors, Single and Two-post Lifts, Car Washers, Bulk Pumps, Air Scales and Hose Reels. Use the coupon now to ask for illustrated bulletins on the items which interest you.



MODEL 100-A
GASOLINE PUMP



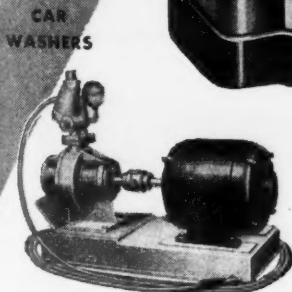
MODEL 100-B
GASOLINE PUMP



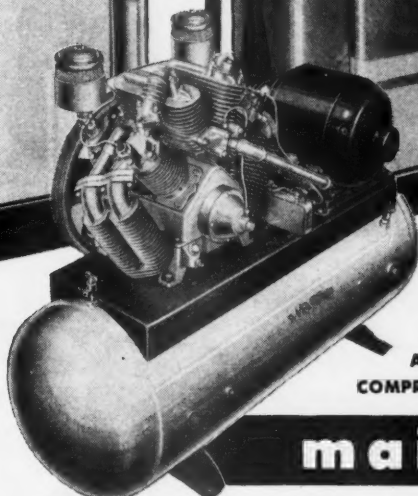
HOSE
REELS



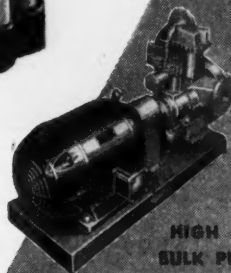
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CAR
WASHERS



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COMPRESSORS



HIGH LIFT
BULK PUMPS

mail today!

ALL BACKED BY
*Nationwide
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THE WAYNE PUMP COMPANY

504 Tecumseh Street, Fort Wayne 4, Indiana

I am interested in ☐ Service Station Pumps ☐ Air Compressors ☐ Lifts
☐ Car Washers ☐ Bulk Pumps ☐ Hose Reels ☐ Air Scales. Please send
illustrated bulletins on items checked.

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ADDRESS _____

CITY _____

STATE _____

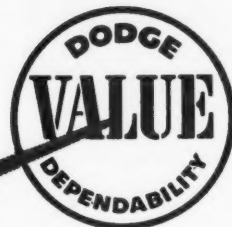
LOADING DOCK LIFTS • PIT LIFT JACKS • AIRPORT REFUELERS

MOTOR AGE, December, 1949

Any way you figure it

DODGE TRIPLE-PROFIT OPPORTUNITY

is your best deal



The Dodge Dealer Agreement ... only One of Its Kind!

In the past eighteen years, the Dodge dealer organization has consistently placed 2nd or 3rd in new vehicle sales.

As a Dodge-Plymouth Dealer, you are in a competitive position on 80% of all new car deals. Dodge "Job-Rated" trucks cover 97% of all hauling needs. In addition, stability is assured by a steady flow of profitable service business. One in every five cars on the road carries the Dodge or Plymouth name plate.

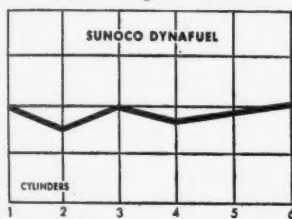
Why not check *your* market? This triple profit agreement may be just what you are looking for!

**DODGE
PLYMOUTH
DODGE "JOB-RATED" TRUCKS**

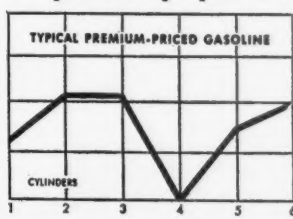
DODGE DIVISION OF CHRYSLER CORPORATION • 7900 JOSEPH CAMPAU, DETROIT 11, MICHIGAN

Sunoco Dynafuel proved superior to 7 leading premium-priced gasolines

Anti-knock performance ... Cylinder by Cylinder!



See for yourself in chart above. . . practically no variation of anti-knock power from cylinder to cylinder when Sunoco Dynafuel was tested. That's why motorists get smoother high-test power when they use Sunoco Dynafuel in their cars' engines.



Here's how a typical premium-priced gasoline compared under same test. Great variation of anti-knock power in different cylinders is instantly apparent. In your customers' cars this means "underfed" cylinders . . . probable knocking in cylinders 1 and 4.

...for smoother anti-knock performance in all cylinders

Think of it . . . Sunoco Dynafuel out-performs leading premium-priced gasolines—yet saves motorists up to 2¢ a gallon!

Certified tests prove Sunoco Dynafuel's superiority for delivering smoother anti-knock performance in all cylinders—not over ordinary or regular gasolines—but over 7 leading premium gasolines. And for additional proof: remember—more Detroit Automotive Engineers use Sunoco Dynafuel in their own cars than any other gasoline . . . 4 to 1 over the next nearest brand!

Up to 2¢ a gallon less
than other high-test gasolines



PITTSBURGH TESTING LABORATORY
ESTABLISHED 1901
INDUSTRIAL RESEARCH DIVISION
STEVENSON AND LOCUST STREETS
PITTSBURGH, PA.

August 29, 1949

Sun Oil Company
1608 Walnut Street
Philadelphia 3, Pa.

Subject: Anti-Knock Distribution Tests
Dynafuel vs. Premium-priced Gasolines

Gentlemen:

We have examined and hereby certify to Report No. A-9 of your Research and Development Department covering the anti-knock distribution tests in which Sunoco Dynafuel was compared with seven (7) leading premium-priced gasolines.

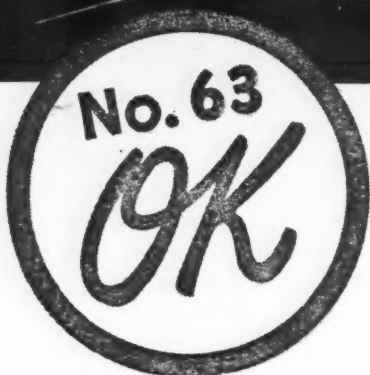
These tests were made under our supervision, using samples of premium-priced gasolines purchased by us at retail service stations in Philadelphia, Pittsburgh, Cleveland, Boston, and Detroit.

Sunoco Dynafuel proved superior to all seven (7) premium-priced gasolines — in uniformity of anti-knock performance in all cylinders — as measured by the ASTM Standard Motor Method.

Very truly yours,
PITTSBURGH TESTING LABORATORY
Laurence K. Jones
Laurence K. Jones,
Manager - Special Test Section

There may be a Sunoco Franchise available in your neighborhood. Write the nearest Sun Oil office or Sun Oil Company, 1608 Walnut Street, Phila. 3, Pa.

MOTOR AGE, December, 1949



ONE OF *142 Quality Checks*

The quality of any safety glass is directly dependent on the plastic laminate in it. So, in our Check No. 63, we see to it that the temperature and humidity are exactly right when the freshly-dried plastic laminate goes to the cutting room.

This is only *one* of our 142 Quality Checks and Controls, all of which are equally important to you, because they give L·O·F Safety Glass:

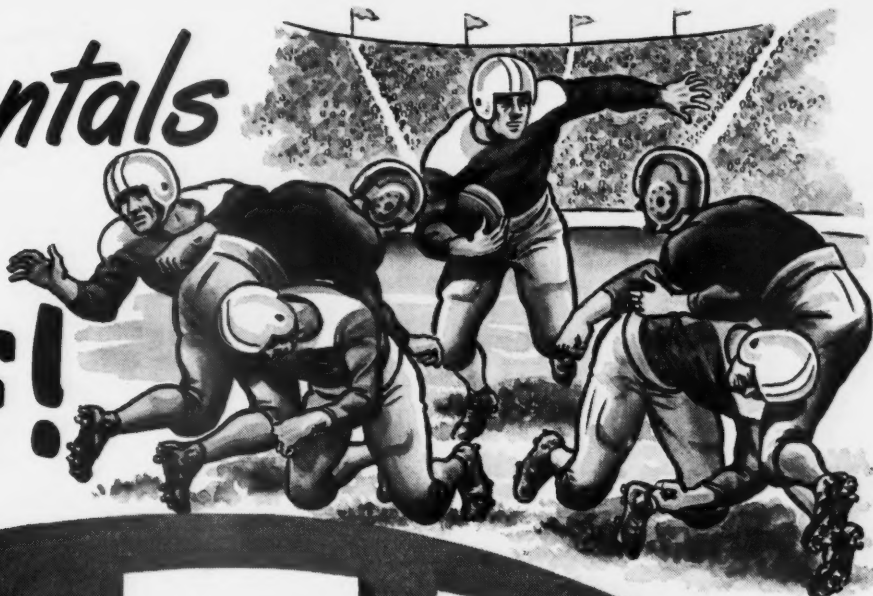
1. Better heat stability
2. Better light stability
3. Better strength for safety
4. Better adhesion, glass to plastic

That's why L·O·F Hi-Test is the best Safety Plate Glass you can get—anywhere. Libbey-Owens-Ford Glass Company, 60129 Nicholas Building, Toledo 3, Ohio.

**NO FINER GLASS THAN
LIBBEY-OWENS-FORD**



Fundamentals **PAY OFF!**



A E P AUTOMOTIVE EQUIPMENT PLAN

THE BEST EQUIPPED SHOP
GETS THE PROFITABLE BUSINESS

BUY... AND FINANCE...
THROUGH YOUR JOBBER

ONE CONTRACT... ONE COST
... INSURANCE INCLUDED

Football coaches know that the fundamentals . . . blocking and tackling . . . are the most important factors for a win.

Good, modern equipment is fundamental for a profitable automobile repair shop.

Car-owners have to judge by appearances. They can't know, by looking, how smart and capable your mechanics are. But if they see that your equipment is new . . . modern . . . efficient . . . they'll be impressed . . . and you'll get their business.

Use the Commercial Credit Automotive Equipment Plan to purchase any or all of the new equipment you need now. A small cash outlay can bring you a big cash income. Ask your jobber about it.

If you don't know about A E P . . . ask your jobber.

COMMERCIAL CREDIT CORPORATION

A Subsidiary of

Commercial Credit Company, Baltimore ■ Capital and Surplus \$100,000,000

MORE THAN 300 OFFICES IN PRINCIPAL CITIES OF THE UNITED STATES AND CANADA



This third shim might save you 35 minutes!

SPREAD out here, you see a Buick parts kit—for replacing Ring Gear and Pinion.

You'll find most of these jobs require one shim or two, when you put them together. But suppose you needed a *third* shim—and had to drop that job for 30 or 35 minutes while you chased after one more little shim?

THE MORAL IS —

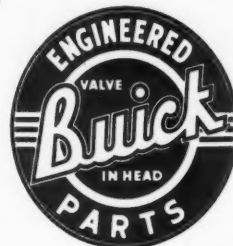
Whenever you need parts for a Buick, it will pay you to get them from the nearest Buick dealer (at the regular wholesale rates) — and get them in a factory-packaged complete *kit*.

It will save a lot of your time (which is a lot of your money, today!) because you have all the related parts you need, right in one spot where you want them, on the job. And you'll do a better job, a safer job that won't have your customers complaining or bringing the car back for a costly make-good.

So you see why that third shim is in the kit—along with the can of correct Hypoid Lubricant. *It's there to make it easy for you—to do a decent job—while you save time!*



**You'll save money—turn out better jobs—
with . . .**



Buy them from your local Buick dealer



How to Rate like Brother Gates!

MAKE MONEY FASTER, HAVE MORE FUN

Eight Quick Reasons to Switch to Martin-Senour Hi-Solids Lacquers and Synthol Enamels

- 1 Higher painting profits.
- 2 Exact color match to car-maker's specifications.
- 3 Top quality, top durability, top beauty.
- 4 No time wasted mixing or matching.
- 5 Patented pour-top can prevents waste.
- 6 No come-backs, no headaches.
- 7 Easier to handle . . . jobs out on time.
- 8 Available everywhere... call your N.A. P.A. jobber.



Painting Cars the M-S Way!

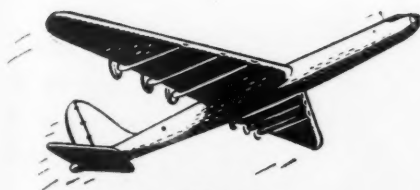
Brother Gates is really living, these days, with time and money to do the things he wants. Thanks to ready-mixed Martin-Senour finishes, he paints more cars faster than any other shop in town. Mixing time and comebacks are eliminated because every M-S finish is factory-matched to the car-maker's specifications. Factory-packaged for positive control, too. That's why every job is right the first time. Simply check the car's color, make and model in the M-S catalog. Then order from your N.A.P.A. jobber. It's quick, easy and pays off . . . fast. Start profiting the M-S way today!

MARTIN-SENOUR

2520 South Quarry Street, Chicago 8, Illinois

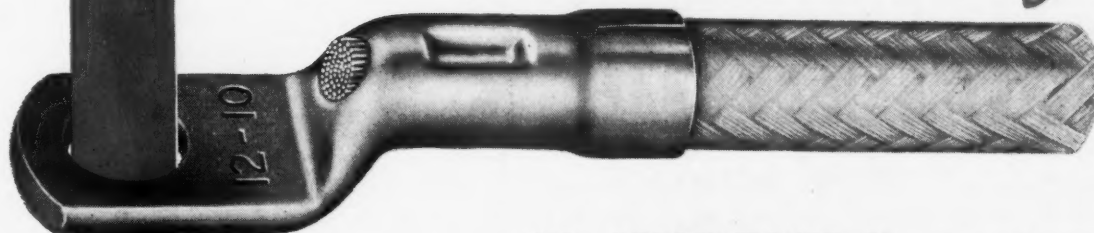
Factory Packaging

is the only Positive Control from Factory to Finisher



BURNDY

Keeps them flying
Keeps them rolling



with **HYDENT** Connectors

From the skyways to the highways come Burndy Connectors . . . meeting the rapid pace and rigid performance standards of the automotive industry.

One-piece, pure copper, tin-plated.

Seamless, no splitting.

Insulation grips prevent wire breakage—fraying of insulation.

Single die of Hytool indents all sizes anywhere on barrel—top, side or bottom.

Same Hytool cuts wire, strips insulation, closes insulation grips.

Just two connector sizes accommodate all primary wire gauges.

Wire size stamped on each connector.

Ask your jobber today

He'll show you the neat Burndy Automotive Wiring Kit, packed with assorted connectors and insulating sleeves plus the nifty do-all Hytool. He's got the convenient Handy Stock packages or Super Stock quantities for volume wire servicing.



MAIL THE COUPON!

Get the full story from Burndy.
Prove to yourself how Burndy
connectors save you time, tem-
per and trouble.

BURNDY ENGINEERING CO.
107 Bruckner Boulevard
New York 54, N. Y.

Please send me, without obliga-
tion, complete information on
Burndy Hydent connectors.

Name _____

Company _____

Street _____

City _____ Zone _____ State _____

25 YEARS AS ELECTRICAL CONNECTOR SPECIALISTS

**- SELLS
ON SIGHT!**

THE NEW AND IMPROVED
Saginaw

**RECIRCULATING-BALL
BUMPER JACK**
is your star salesman!

It's a fact—this amazing new and exclusive bumper jack sells on sight! Place it in the hands of your customers . . . listen to them ask questions . . . watch them sell themselves . . . hear the music of the cash register!

And they're getting the finest, the sturdiest, the easiest-operating and the safest bumper jack ever developed! Operates on the same principle used to actuate bomb-bay doors and wing flaps in military aircraft. The base is removable and the handle folds against the shaft. It looks like quality and is quality.

If you want a real profit "angel," stock this unique item and see to it that every one of your customers gets a chance to "play" with it. Call in your United Motors distributor and start to jack up your profits!



Saginaw Recirculating-Ball Bumper Jacks are available through United Motors distributors. Call yours today!

Works so easily and is so safe a child can operate it!

Handle can't spin while car is stationary or is being lowered!

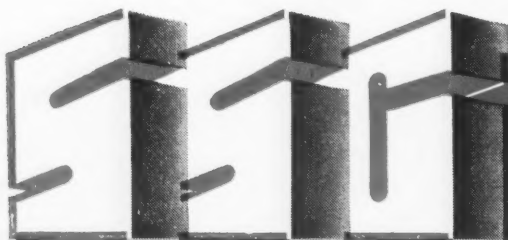
Fits all cars including '49 models

Sturdy, dependable, long-lasting!

TESTED AND PROVED PRINCIPLE!



Rolling balls are inserted between threads where they recirculate through a special race-way and continuously reduce friction to increase efficiency.



Saginaw
STEERING GEAR DIVISION
General Motors Corporation, Saginaw, Michigan

PRODUCTS

STEERING GEAR ASSEMBLIES • STEERING LINKAGE ASSEMBLIES
PROPELLER SHAFTS • DIESEL ENGINE AND AIRCRAFT PARTS



"I've found FENDIX® undercoating the most profitable merchandising item a dealer can have ...

"...we'll sell around 1200 jobs this year for a mighty nice gross figure, and repeat customers ask for Fendix when they trade again. You bet it pays any dealer to ...

FIRST find out about FENDIX"

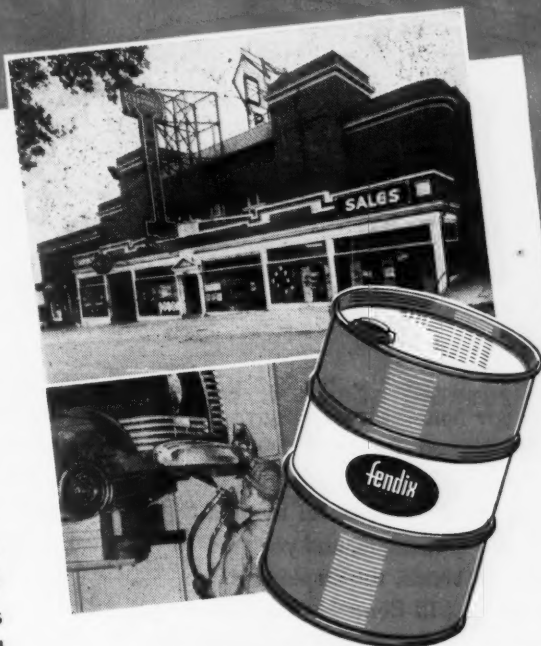
... says Mr. Jack J. Hartley
General Sales Manager, Park Circle
Motor Co., Baltimore, Md., one of the
country's largest Chevrolet dealers

MR. HARTLEY PRAISES FENDIX SERVICE—
You'll like it, too. We make sure your undercoating operations are put on the most profitable basis. We train your spray gun men in correct application methods and your salesmen in business-getting sales techniques.

CHRIS FINNEY LIKES SPRAYING FENDIX—
Park Circle's spray gun man says, "I've tried others but I'll take Fendix every time".
You'll find you get more coverage per drum with Fendix because only a $\frac{1}{16}$ " wet coating of Fendix is needed for a cured coating that gives maximum rust protection and efficient sound deadening.

YOU'LL LIKE FENDIX PROMOTION—
Plenty of free sales helps, material and ideas to keep your Fendix Undercoating business booming.

Write for complete details on the Fendix "Packaged Deal" today ...



Main Office
2431 S. Halsted Street
Chicago 8, Ill.

Eastern Division
909 Davison Chemical Building
Baltimore 1, Md.



Sells as fast and easy as it sprays!



It's a Bigger, Better Bonus when you give it in Bonds

It's a *bigger* bonus when you give it in U. S. Savings Bonds. That's because Savings Bonds pay \$4 at maturity for every \$3 purchased. If it's a \$75 bonus, for example, and you give the bonus in bonds, the employee receives—not a \$75 Bond—but a \$100 Bond. And he *collects* \$100 if he holds the Bond till maturity.

It's a *better* bonus when you give it in Bonds. It encourages saving among your employees—helps to make them

more secure, more stable, more contented and productive on the job. (That's borne out in the more than 20,000 companies that make Bonds available to employees through the Payroll Savings Plan!) Another reason is that the more Bonds people hold today, the greater will be tomorrow's purchasing power—without which no business can prosper! Then again, Savings Bond sales aid the nation's economic security by spreading the national debt.

Thus you help your employees; your company, and the good old U. S. A. itself—which means *yourself*!—when you give the bonus in Savings Bonds . . . and when you push the Payroll Savings Plan. All the facts and assistance you need are available from your State Director, Savings Bonds Division, U. S. Treasury Department. He's listed in your phone book. Why not ask your secretary to get him for you right now?

The Treasury Department acknowledges with appreciation the publication of this message

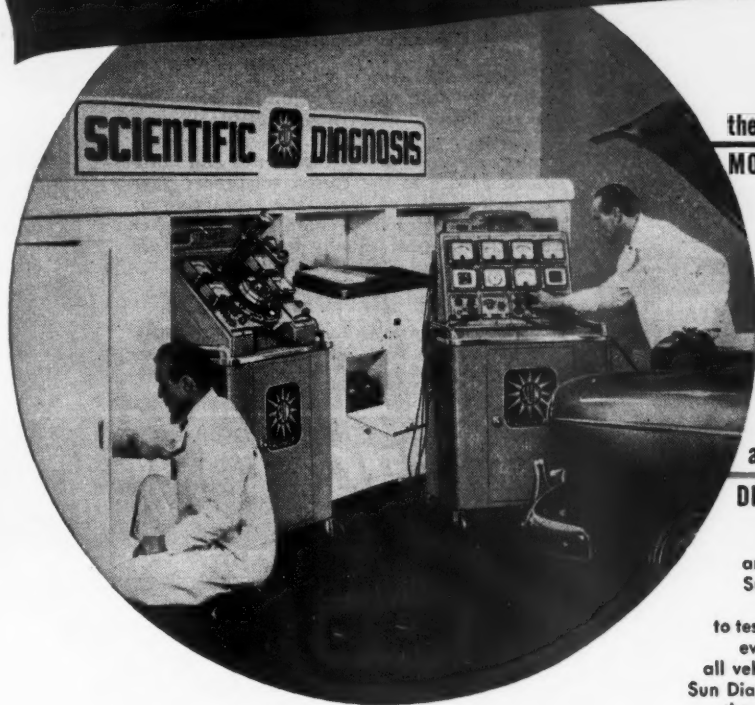


This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and The Advertising Council.

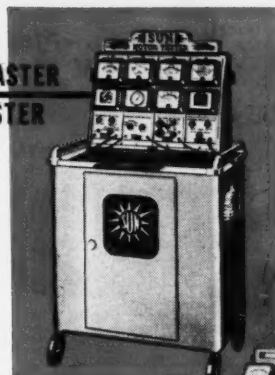


Here's a good reason why some shops
make **BIGGER PROFITS!**

Sun Equipment Helps make Your Mechanics the Best in the Business!

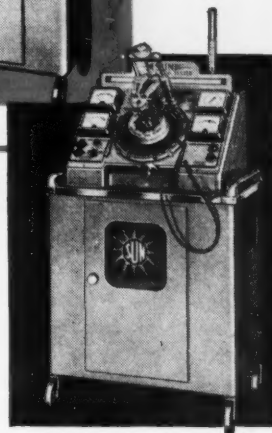


the **SUN MASTER**
MOTOR TESTER



and the **SUN MASTER**
DISTRIBUTOR TESTER

These two Master Units
are the basis of a modern
Sun Diagnosis Department.
These units enable you
to test, quickly and accurately
every part of the motor on
all vehicles. Used with the new
Sun Diagnosis Background Units,
they add eye-appeal as well
as efficiency to any shop.



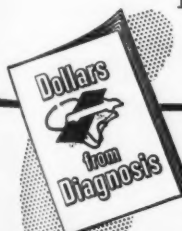
Your Mechanics' Reputation for Good Work depends on Good Diagnosis!

What customers think and say about your service can make or break your business! That's why the nation's leading shops have taken steps to *insure customer satisfaction!* Thousands of America's most successful shops are using Sun Diagnosis Equipment and Sun Diagnosis Procedures to *build customer good will* and increase service profits!

Most good mechanics can repair an engine, if they know what is wrong with it. Sun Diagnosis Equipment and tested Sun Diag-

nosis Procedures tell the mechanic, the customer and you, exactly what work needs to be done. The multiple advantages of Sun *Test-Before-Repair* Procedures are building **BIGGER PROFITS** and **GREATER GOOD WILL** for thousands of others, as they will for you!

Your local Sun Representative, one of the 400 throughout the nation, will be glad to call on you and explain how Sun Diagnosis Equipment and Sun Diagnosis Procedures will work for you!



Get YOUR Copy of "DOLLARS FROM DIAGNOSIS"

It's yours without cost or obligation! Just write on a card or letter "Diagnosis Booklet", and your Sun Man will bring it to you personally. Write **TODAY**—address:

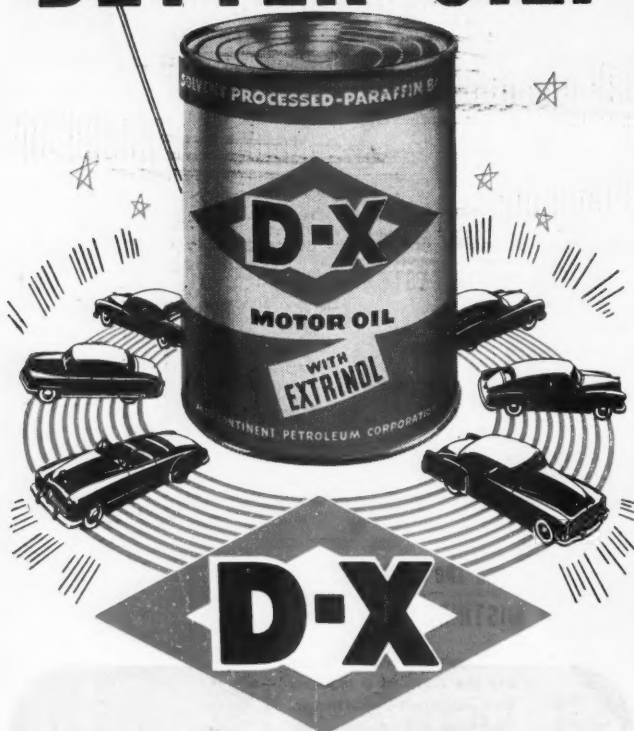


Sun

ELECTRIC CORPORATION
Dept. A, 6353 Avondale Ave., Chicago 31, Ill.

R-3412

Back up New Models with
BETTER OIL!



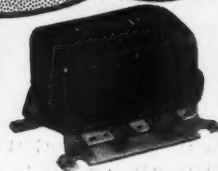
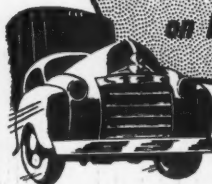
MOTOR OIL
with **EXTRINOL**

Every new car sale is a potential and profitable service account that is yours if you can offer the better oil a new car owner demands for his car. That's why more and more Middle Western new car agencies are featuring D-X Motor Oil with Extrinol. This better oil gives you an unusually convincing sales story to tell...and it will give your customers the satisfaction and lubrication protection they are looking for. See how D-X can help you get more service accounts from your new car sales. Write for information about the profitable D-X Franchise today.



MID-CONTINENT PETROLEUM CORPORATION
Waterloo, Iowa TULSA, OKLA. Terre Haute, Ind.
Chicago, Ill. Minneapolis, Minn. Omaha, Nebr.

NIEHOFF
IGNITION PARTS
Are Making History
on EVERY Highway



All over the world—wherever trucks are rolling, Niehoff quality ignition parts are making history with their dependable performance and endurance. Over a quarter century of "know how," experience and faithful adherence to the closest tolerances have earned for Niehoff parts the reputation of the best in ignition. Niehoff's rigid all-over inspection assures equally fine performance for every part.

C. E. NIEHOFF & CO.

4920 Lawrence Ave., Chicago 30, Illinois
Branches: BOSTON 34, Massachusetts, 254 Brighton Avenue;
LOS ANGELES 15, Calif., 1330 West Olympic Boulevard;
NEW YORK 9, New York, 250 West 54th Street

NIEHOFF The Best
in Ignition!

**BOWES—Offers Opportunity
to Go In
Business for Yourself**



● Valuable Franchises are available now for distributing nationally advertised BOWES "Seal Fast" quality automotive products and equipment in assigned territories.

Reasonable investment is necessary for inventory and business equipment to properly serve dealers, a background of sales experience will be helpful.

A BOWES Franchise offers a qualified man, following factory training, an unusual opportunity to build a profitable business of his own. For more information, send full details about yourself to—

BOWES "SEAL FAST" CORP.
226 N. PINE ST., INDIANAPOLIS 7, IND.



Did you say 3 minutes?

**YES! a complete
OIL CHANGE
in only 3 minutes!**



**BETTER LOOK INTO THE ALLEN
AUTOMATIC OIL CHANGER**



ALLEN ELECTRIC & EQUIPMENT CO.
KALAMAZOO, MICHIGAN

CHAMP-ITEMS

TIME SAVERS—MONEY MAKERS

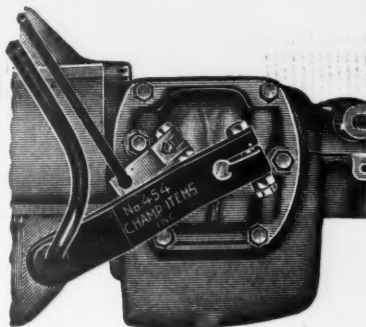
for the Service Field

MECHANICAL GEARSHIFT ASSEMBLY CHANGE-OVER for CHEVROLET 1939-48

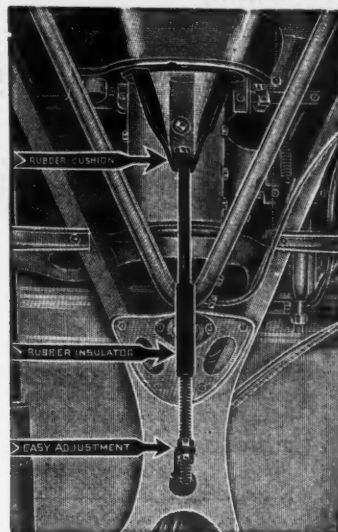
Here is the simple, economical mechanical gearshift change-over that has won wide acceptance. Makes the older models up-to-date, with same type gearshift as on the 1949 cars.

No. 453 for Chevrolet 1939 List \$3.00

No. 454 for Chevrolet 1940 thru '48 List \$3.00



GET IT FROM
YOUR JOBBER



ELIMINATE CLUTCH CHATTER ON FORD, MERCURY, LINCOLN, CHEVROLET AND BUICK CARS.

All necessary bushings, nuts and lock washers with bracket and studs for easy installation. Eliminates metal-to-metal contact. Rubber cushions serve as insulator and provide a means for later adjustment. (Will not fit convertible models.) List \$4.00 per set.

No. 577 for 6 cyl. and V8 Fords and Mercury

No. 578 for Chevrolet 1937-48

No. 579 for Buick 1941-49

No. 580 for Lincoln 1942-48

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St. Louis 14, Mo.



Set of four

\$2.98

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NET PRICE

Sold by
all leading automotive jobbers.

TRADE MARK
Smash-Proof

CREEPER CASTERS

CAN BE USED FOR REPLACEMENT ON
ANY CREEPER OF CONVENTIONAL DESIGN

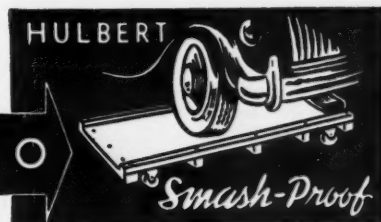
Has the rolling ease of a caster wheel 8" in diameter. Wheel is case-hardened steel. Tremendously strong—will take a load of one ton per caster. A creeper equipped with these seems to float over rough or uneven floors!

WEIGHT—only 10¼ ozs. per
caster.

HEIGHT—2¼ inches. Same as
ordinary creeper
casters.

No. 234

HULBERT



HULBERT MANUFACTURING CO. • Ashtabula, O



Make **BIG PROFITS** on **FRONT COIL SPRING ASSEMBLY** FOR 1935-1948 FORDS and 1941-1948 MERCURYS

This amazing, patented Coil Front End Set that makes old Fords and Mercurys ride like new 1950 models, is a sensation. Sales are great, but with full production, we can ship at once! Thousands of owners of old Fords and Mercurys are ready customers for this revolutionary Coil Front End. Get in on the huge profits **NOW**. **FREE** Advertising support. Ashland, Wisc., Ford dealer says, "Results beyond expectations."

AUTOMOTIVE-HOUSEHOLD Products Co.

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Firm _____

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City _____ Zone _____ State _____

Name of Jobber _____

SPRINGFIELD

Top Quality

TUNGSTEN CONTACTS AND CONDENSERS

Springfield Electrical Specialties Inc., 120 Wooster St., New York 12, N. Y.

Easiest Way to Find . . .

- EXTRA SALES AND PROFIT
- DIRECTIONS ON THE HIGHWAYS

HULL AUTOMOBILE COMPASS

Sales of Hull Automobile Compasses—by dealers in all sections of the country—have never ceased their upward trend in 15 years. Hull Compasses are selling in greater quantities today than ever before, despite the general drop-off in most manufactured goods. That's why it's as easy for you to find extra sales and profit with Hull Compasses as it is for motorists to find directions with these dependable, handsome instruments.

HULL MFG. CO.
P. O. Box 246-MA12, Warren, Ohio
Send me information and prices on the Hull Compasses.

NAME _____
Check: ☐ Dealer ☐ Chain Store ☐ Jobber
STREET _____
CITY _____ STATE _____

**A BEACONLITE
ILLUMINATED**
List Price \$5.95

**B STREAMLINE
STANDARD**
List Price \$3.95



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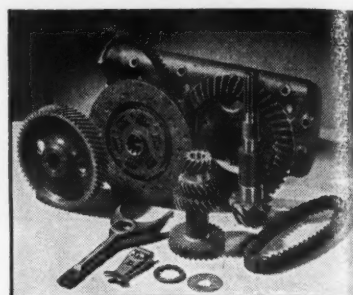


B



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PARTS**

are
Certified to excel



PERFECTION GEAR CO.
HARVEY, ILLINOIS

MOTOR AGE

—is a publication keyed directly to the needs of the automotive after-market. Built on the requirements of car dealers and repair shops. Edited by Frank P. Tighe. Read it every month.



A Chilton Publication

**CHESTNUT AND 56TH STS.
PHILADELPHIA 39, PA.**

Classified Advertisements

Auto Garage For Sale: Complete with building and equipment to handle new and used cars, trucks. Has show room, parts department, wash rack, greasing, body shop, paint dept., storage. On Routes 20-13-250-61. Price \$35,000.00. \$10,000.00 down, balance like rent. The Big Garage, 14-16 South Hester St., Norwalk, O.

For Sale: Hudson Agency with wide exclusive territory. Also International Trucks and Farm Implements. Located in a large Western Michigan city. Earnings over \$80,000 net yearly. Operation can be split or inventory reduced to suit purchaser. Corporation dissolving. Inspection invited. Write for details of File 2381. Associated Business Brokers, 1200 Godfrey S.W., Gr. Rapids, Mich.

For Sale: IGNITION TESTER; coil-condenser, attractive instrument. Regular \$42.50, close-out \$12.95. Money back guarantee. Modelectric Products, Asbury Park, N. J.

GET RID OF GAS FUMES

Solve Your Garage and Shop Ventilation Problem This Simple Inexpensive Way

What you have been waiting for—the final, successful solution to your garage ventilation problem all available in a packaged kit, including motor and blower, ready to install.

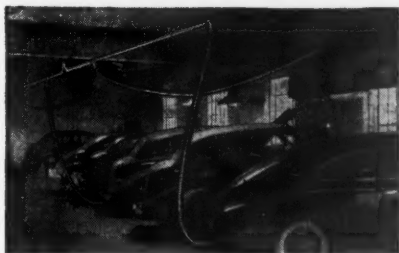
- Removes gas fumes at source (exhaust pipes).
- Simple installation—no change or alteration of existing facilities.
- Not in your way—instantly in use or out of way when you don't need it.
- Saves man-hours and helps keep employees. Mechanics have less sinus, headaches, etc.

National also makes a complete packaged kit for underfloor installation. Literature on request.

Complete packaged kit
F.O.B. Decatur

\$187.50

Write for circular
Illustration shows standard kit with two extra tube outlets.



Write for circular.

THE NATIONAL SYSTEM OF GARAGE VENTILATION
DEPT. 3122, 330 N. CHURCH ST., DECATUR, ILL.

World's Largest Manufacturer of Exclusive Garage Ventilating Equipment.

*There's More
than Steel in*

**TUTHILL
SPRINGS**

for ALL
CARS &
TRUCKS

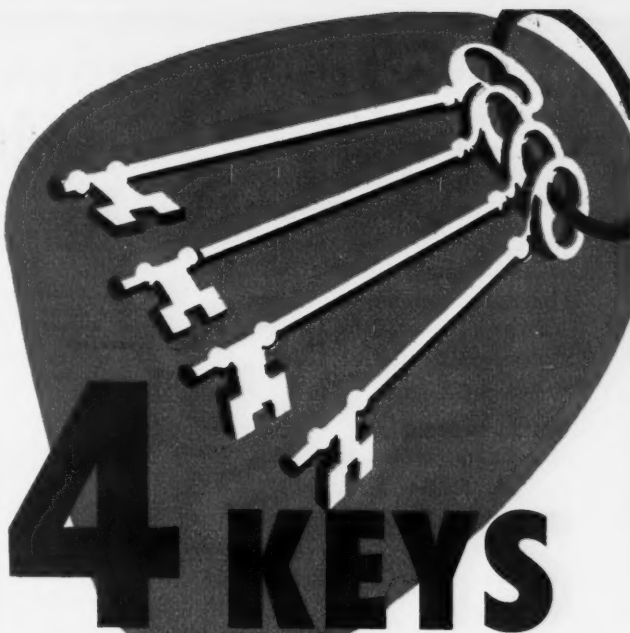
There's **EXPERIENCE**—70 years in precision leaf spring manufacturing

There's **QUALITY**—Finest alloy obtainable, heat treated for added strength

ASK YOUR JOBBER

or write direct
for CATALOG

TUTHILL SPRING CO.
760 WEST POLK STREET • CHICAGO 7, ILLINOIS



TO BETTER AUTOMOTIVE CLEANING

- 1. WHITER SIDE WALLS** It sure tickles the owner to see his sidewalls dazzling white. You can do it in seconds with Kelite No. 28—safely!
- 2. SAFE PARTS CLEANING** From carburetor parts to diesel oil filters, there's nothing to compare with Kelite 555. Fastest, best degreaser and decarbonizer known.
- 3. MAGIC STEAM CLEANING** Kelite No. 24 for steam machines is miles ahead. No curd—no coil plugging—no smell. Penetrates and loosens stubborn deposits.
- 4. CLEANING RADIATORS** Winter or summer, they sure need it. And Kelite Formula 8 sure gets 'em clean. Just try it once and see the difference.

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Hudson invades lower-price field!

Great New Pacemaker

opens big new market for Hudson Dealers!

THE GREAT new Pacemaker now offered by Hudson brings the room, the riding qualities, the comfort, and the safety of Hudson's exclusive "step-down" design principle to a lower-price field for the first time in automobile history.

The year 1949 was the most successful and profitable that Hudson dealers have ever enjoyed—but the amazing Pacemaker opens the doors to a great new market for them that's twice as large . . . faster-moving . . . more profitable in every way.

There are hundreds of thousands of "step-down" designed New Hudsons on the road today . . . and the total's rolling up as more and more people

find out about this different kind of car with a totally new kind of ride and a new standard of performance.

Why not get in *early*, selling a car that has exclusive features, in a market that's hungry for the years-ahead advantages that only Hudson gives? Just write—wire—or phone Mr. N. K. VanDerzee, Vice-President in Charge of Sales, Hudson Motor Car Company, Detroit 14, Michigan . . . and get the full story on Hudson's *good deal for good dealers!* Get set to set the sales pace in your area, selling the new Pacemaker—and other New Hudsons; get set for a more profitable future with a Hudson franchise *now!*

New Hudson

ONLY CAR WITH THE **STEP-DOWN DESIGN**

3 GREAT HUDSON SERIES



Hudson Pacemaker Series



Hudson Super Series



Hudson Commodore Custom Series



40 YEARS OF ENGINEERING LEADERSHIP

A few of the more than 80 important advances pioneered by Hudson

- 1909 Fluid-Cushioned Clutch
- 1916 First Super-Six, high-compression engine with compensated inherently balanced crankshaft
- 1926 First steel bodies built on a production basis in own manufacturer's plant
- 1935 Gearshift control at steering wheel

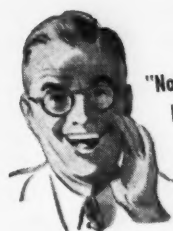
- 1936 Patented Triple-Safe Brakes (hydraulic and reserve mechanical systems from same foot pedal, plus parking brake)

- 1948 Monobilt body-and-frame*, an all-welded unit with recessed floor and exclusive "step-down" design

- 1949 Super-matic Drive—no-shift driving, economical overdrive

Go Places with HUDSON . . . the Great Pioneer!

*Trade-mark and patents pending



"Now, Hudson dealers have added a brilliant new car to their Super and Commodore Custom Series!"



"The amazing Pacemaker is a 'step-down' designed car at a lower price!"



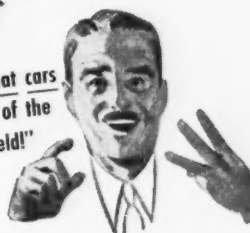
"Now there's twice as big a market for New Hudsons!"



"Hudson dealers now have double the profit opportunity they had in '49!"



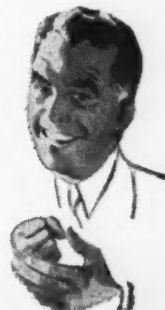
"Hudson has exclusive product advantages offered by no other car at any price!"



"Hudson offers three great cars for complete coverage of the rich, medium-price field!"



"This greater Hudson selling opportunity is really the deal of the year!"



"Get set for a real future—get the facts on a Hudson franchise **NOW!**"



THE *Quality* MAGAZINE

MOTOR AGE has a subscription
renewal percentage of

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—higher than any other monthly automotive publication. Its readers are keenly interested, they accept MOTOR AGE as an authority.

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of its subscribers are one-year subscriptions, assuring you that the subscriber is still alive, in business and still interested in MOTOR AGE.

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of its circulation goes to the branches of the automotive after-market you want most to reach—the car and truck dealers, the independent maintenance establishments, and the automotive jobbers.

The quality circulation of MOTOR AGE is truly the outstanding value of the automotive after-market.



MOTOR AGE

A CHILTON Publication

CHESTNUT and 56th STREETS, PHILADELPHIA 39, PENNSYLVANIA
OTHER CHILTON AUTOMOTIVE PUBLICATIONS: AUTOMOTIVE INDUSTRIES, COMMERCIAL CAR JOURNAL, CHILTON Automotive BUYER'S GUIDE

*2 Years from Now,
Customers Will Still be Bragging—
"You're the Santa Claus!"*

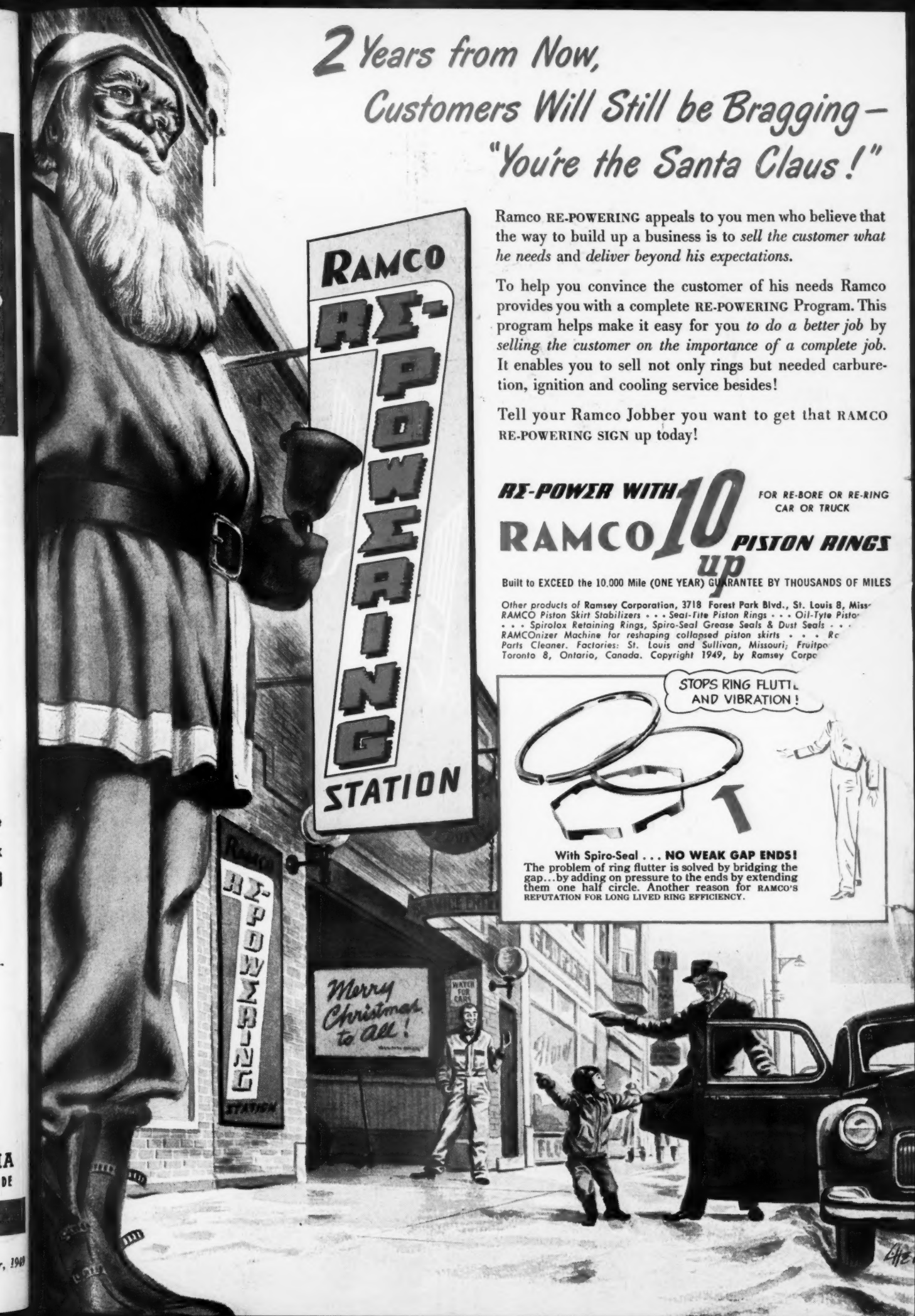
Ramco RE-POWERING appeals to you men who believe that the way to build up a business is to *sell the customer what he needs and deliver beyond his expectations.*

To help you convince the customer of his needs Ramco provides you with a complete RE-POWERING Program. This program helps make it easy for you to *do a better job by selling the customer on the importance of a complete job.* It enables you to sell not only rings but needed carburetion, ignition and cooling service besides!

Tell your Ramco Jobber you want to get that RAMCO RE-POWERING SIGN up today!

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RAMCO 10 up **PISTON RINGS**
FOR RE-BORE OR RE-RING CAR OR TRUCK
Built to EXCEED the 10,000 Mile (ONE YEAR) GUARANTEE BY THOUSANDS OF MILES

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